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Pitfalls of FCNR (B) scheme

Source: The post "**Pitfalls of FCNR (B) scheme**" has been created based on "**Pitfalls of FCNR (B) scheme**" published in "Business Line " on 24th July 2026.

UPSC Syllabus: GS-3- Economy

Context: The **Foreign Currency Non-Resident (Bank) [FCNR(B)] Deposit Scheme** aims to attract NRI dollar deposits, strengthen India's foreign exchange reserves, and support the rupee. However, while it provides immediate capital inflows, it may create long-term risks for India's external account and the RBI's balance sheet.

Benefits of the FCNR(B) Scheme

1. The scheme attracts **NRI dollar deposits**, thereby increasing India's foreign exchange reserves.
2. Higher reserves help reduce pressure on the **rupee** and improve external sector stability.
3. The RBI has removed **interest rate ceilings**, making FCNR(B) deposits more attractive for NRIs.
4. Banks receive additional funding, helping address **domestic deposit shortages**.
5. Every dollar swapped with the RBI provides **rupee liquidity** for domestic lending.
6. The RBI bears the **hedging cost**, protecting banks from exchange rate risk.

Concerns Associated with the Scheme

1. The scheme depends heavily on **leveraged borrowing**, increasing financial risks.
2. Indian banks borrow dollars from **overseas markets**, raising dependence on external funding.
3. Increased foreign borrowing pushes up **global borrowing costs** and compresses bank margins.
4. Banks must generate adequate returns because FCNR(B) deposits offer **higher interest rates** than domestic deposits.
5. Current dollar inflows will become **future dollar outflows** when deposits mature.
6. The RBI implicitly commits to supplying dollars in the future, increasing **contingent foreign currency liabilities**.
7. The RBI's **short dollar forward position** increases, reducing the stock of unencumbered reserves.
8. Effective **reserve adequacy** and **import cover** decline after accounting for forward commitments.
9. Excessive emphasis on exchange rate management may affect the RBI's **monetary policy autonomy**.

Way Forward

1. Use FCNR(B) deposits only as a **temporary crisis-management tool**, not as a regular source of external financing.
2. Encourage **stable long-term capital inflows**, such as FDI, instead of relying on debt-like inflows.
3. Limit excessive **leverage** and strengthen monitoring of overseas borrowing by banks.
4. Maintain **adequate unencumbered foreign exchange reserves** to preserve reserve adequacy.
5. Strengthen **external sector resilience** through export growth, diversification of capital inflows, and prudent reserve management.
6. Ensure that exchange rate management does not compromise the RBI's **monetary policy independence**.

Conclusion: The FCNR(B) scheme offers short-term support to the rupee and foreign exchange reserves, but it also creates future obligations and external vulnerabilities. A balanced approach that combines temporary liquidity measures with stronger external sector fundamentals is essential for sustainable macroeconomic stability.

Question: FCNR(B) deposits can strengthen India's foreign exchange reserves in the short term, but they may also create long-term external sector risks. Discuss.

Source: Business Line

The right to protest and the lim-its of police power

Source: The post "The right to protest and the lim-its of police power" has been created based on "The right to protest and the lim-its of police power" published in "The Hindu " on 24th July 2026.

UPSC Syllabus: GS-2- Governance

Context: The **right to peaceful protest** is a fundamental democratic right guaranteed under **Article 19(1)(b)** of the Constitution. However, it is **not absolute** and is subject to reasonable restrictions under **Article 19(3)** to balance individual freedoms with public order and security.

Constitutional and Legal Framework Governing Protests

1. **Article 19(1)(b)** guarantees citizens the **right to assemble peacefully and without arms**.
2. **Article 19(3)** permits **reasonable restrictions** in the interests of **public order, sovereignty, and integrity of India**.
3. Under the **Bharatiya Nyaya Sanhita (BNS)**, an assembly of **five or more persons** becomes unlawful only if its **common object** involves criminal force, resisting law, committing an offence, or compelling others through force or threats.
4. Under **Section 163 of the Bharatiya Nagarik Suraksha Sanhita (BNSS)**, authorities may impose **prohibitory orders** to prevent protests in specified areas when necessary to maintain public order.
5. The **BNSS** empowers an **Executive Magistrate or authorised police officer** to order the dispersal of an unlawful assembly or one likely to disturb public peace. Force may be used only if the assembly refuses to **disperse.**

Standards Governing Police Action

1. The **NHRC Manual on Human Rights for Police Officers** states that democratic policing must protect both **public order and citizens' rights**.
2. The **UN Basic Principles on the Use of Force and Firearms** require police action to be **lawful, necessary, and proportionate**.
3. The **Code of Conduct for the Police in India** mandates that police should first use **persuasion, advice, and warnings**, and resort only to the **minimum force necessary**.
4. The **BNSS** requires police officers making arrests to display **clear identification**, though no similar requirement exists for officers engaged in crowd control.

Supreme Court's Stand

1. **Anita Thakur v. State of Jammu & Kashmir (2016):** Excessive police force violates fundamental rights; police action must be reasonable and accountable.
2. **Mazdoor Kisan Shakti Sangathan v. Union of India (2018):** Authorities may regulate protests but cannot extinguish the right to protest altogether.
3. **Amit Sahni v. Commissioner of Police (2020):** The right to dissent is constitutional, but public spaces cannot be occupied indefinitely.

Way Forward

1. Ensure **uniform Standard Operating Procedures (SOPs)** for crowd management based on necessity and proportionality.
2. Strengthen **police accountability** through mandatory identification during crowd-control operations.
3. Promote **dialogue and negotiation** before resorting to coercive measures.
4. Designate **adequate protest sites** while ensuring meaningful public access and visibility.
5. Provide **judicial oversight** and prompt investigation into allegations of excessive police force.
6. Balance **fundamental rights** with **public order** through proportionate and transparent policing.

Conclusion: The right to protest is an essential feature of a constitutional democracy. While the State has a legitimate duty to maintain public order, restrictions and police action must remain lawful, necessary, proportionate, and accountable to preserve both democratic freedoms and the rule of law.

Question: "The right to protest is a cornerstone of democracy, but it is subject to reasonable restrictions." Discuss the constitutional and legal framework governing protests in India.

Source: The Hindu

Warning Signals for India from NATO's Ankara Summit

UPSC Syllabus: Gs Paper 2- International Relations **and** International organisation.

Introduction

The North Atlantic Treaty Organization (NATO) Ankara Summit (July 7–8, 2026) marked a major shift in the alliance's defence strategy through higher military spending, stronger industrial capacity and long-term military modernisation. These decisions reflect changing global security priorities and are expected to reshape the international defence market. For India, the summit highlights growing challenges in defence procurement and reinforces the need to strengthen self-reliance in critical defence technologies and manufacturing.

Key Outcomes of the Ankara Summit

1. **Collective Defence Commitment:** NATO's **32 member countries** reaffirmed their **ironclad commitment to collective defence under Article 5 of the Washington Treaty**. They also reiterated the importance of maintaining the transatlantic partnership despite differences among members.

2. **Higher Defence Spending:** NATO unanimously endorsed **The Hague Defence Commitment**, under which every member will spend **at least 5% of its GDP on defence by 2035**. This replaces the earlier **2% target** and marks the alliance's biggest defence spending commitment.

3. **Continued Support for Ukraine:** NATO pledged **unwavering support for Ukraine's freedom, sovereignty and territorial integrity**. It also committed to maintaining long-term military assistance as the conflict with Russia continues.

4. **Building a Strong Defence Industrial Base:** NATO decided to develop a **high-technology, high-capacity European Defence Industrial Base (DIB)**. This includes strengthening factories, research laboratories, skilled workers and manufacturing networks needed to sustain military power.

5. **Focus on Implementation:** The summit gave priority to converting political commitments into real military capability. NATO emphasised greater investment, industrial production and innovation to make its defence plans operational.

NATO's Changing Strategic Priorities

1. **Russia's View on NATO Expansion:** Russia considers NATO's eastward expansion into countries such as **Poland, Romania and the Baltic states** as a threat to its security. Moscow believes these regions traditionally belonged to its strategic sphere of influence.

2. **Ukraine Crisis and NATO Enlargement:** Russia's **2022 invasion of Ukraine** was partly driven by fears that Ukraine could join NATO. Although the war blocked Ukraine's entry, it led **Finland and Sweden** to abandon neutrality and become NATO's **31st and 32nd members**.

3. **Changing Security Environment:** NATO argues that it is responding to changing security conditions rather than pursuing expansion. It sees its recent decisions as necessary to protect Europe against emerging threats.

4. **Transformation After the Cold War:** After the **1990–91 end of the Cold War** and the dissolution of the **Warsaw Pact**, NATO shifted from territorial defence to **out-of-area operations**, including missions in the Balkans.

5. **Shift After the 9/11 Attacks:** Following the **2001 terrorist attacks** in the United States, NATO expanded its role by joining the **Global War on Terror**, showing its ability to adapt to new security challenges.

6. **Response to Great-Power Competition:** The growing strategic cooperation between **Russia and China** has created another major shift in NATO's priorities. The alliance is now preparing for long-term competition between major powers.

Why Defence Industrial Capacity Has Become a Priority

1. **Need to Match Commitments with Production:** Higher defence budgets alone cannot strengthen security unless military equipment is produced on time. NATO therefore placed equal importance on expanding industrial capacity.

2. **Europe's Production Challenges:** Even before the **5% defence spending pledge**, Europe's defence industry struggled to increase production. Defence companies such as **MBDA** and **Rheinmetall** warned about shortages in ammunition manufacturing.

3. **Lessons from Recent Conflicts:** The **U.S.-Israel bombing campaign against Iran (Operation Epic Fury)** showed how quickly modern wars consume weapons and ammunition. The United States fired **more than 850 Tomahawk cruise missiles**, while its annual production remains only **85 missiles**, meaning replacement would take almost **ten years**.

4. **Weak Alliance-Wide Coordination:** Many NATO countries possess capable defence industries, but production planning remains poorly coordinated across the alliance. This creates gaps in the supply of important military equipment.

5. **Critical Capability Gaps:** The Ukraine war exposed shortages in **air defence missiles, interceptors, precision-guided munitions and artillery rockets**. These deficiencies have become a major concern for NATO's future military readiness.

6. **Technology as a Force Multiplier:** NATO's modernisation plans also emphasise **artificial intelligence, cyber capabilities, autonomous systems and advanced missile defence**. These technologies are becoming central to future military preparedness.

Global Defence Market: Emerging Challenges

1. **Growing Dependence on the United States:** Without major improvements in Europe's defence industry, higher military spending will increase dependence on American suppliers. **Half of Europe's defence spending during 2022–2024 came from the United States, compared to 28% during 2019–2021.**

2. **Rapid Growth in U.S. Arms Sales:** Notifications for **U.S. Foreign Military Sales** to European customers increased fourfold since **2008**, reaching **$76 billion in 2024**. This reflects Europe's growing reliance on American defence production.

3. **Rising Global Demand for Weapons:** NATO's large-scale military modernisation has sharply increased global demand for defence equipment. As more countries compete for the same supplies, production pressure is increasing across the defence industry.

4. **Shift Towards a Seller's Market:** The rapid increase in defence procurement is changing the international arms market from a **buyer's market to a seller's market**. Countries purchasing weapons may face longer delivery timelines and greater competition for advanced military systems.

Warning Signals for India

1. **Greater Competition for Defence Imports:** As NATO members increase defence spending and place larger orders, competition for military equipment is rising. This makes it more difficult for major buyers like **India** to obtain timely supplies.

2. **Supply Chain Delays:** The delay by **General Electric Aerospace** in supplying **F-404 fighter jet engines** for India's **Tejas Light Combat Aircraft** programme shows how global demand can affect India's defence preparedness.

3. **Pressure on Advanced Technologies:** Future military competition will increasingly focus on **drones, artificial intelligence, cyber warfare, electronic warfare and resilient networks**. India cannot depend on foreign suppliers that are already meeting their own countries' defence needs.

4. **Global Production Priorities:** Europe is expanding its defence production to meet its own military requirements. This can reduce export availability and increase delivery timelines for countries outside the alliance.

5. **Shift in the Global Arms Market:** NATO's increased defence spending is changing the international arms market from a **buyer's market to a seller's market**, making defence procurement more difficult for large importers like India.

Way Forward for India's Defence Preparedness

1. **Strengthen Defence Self-Reliance:** India should reduce dependence on foreign suppliers by building stronger domestic defence manufacturing capabilities. This will make defence preparedness more reliable during global crises.

2. **Develop Emerging Defence Technologies:** India should invest in **artificial intelligence, drones, cyber warfare, electronic warfare and resilient networks** to meet the demands of future warfare.

3. **Expand Indigenous Defence Industrial Capacity:** India should strengthen its defence industrial base by improving manufacturing capacity, technology development and skilled manpower for long-term military readiness.

4. **Build Resilient Supply Chains:** India should ensure that critical defence programmes are supported by reliable domestic production. Stronger supply chains will reduce disruptions caused by global conflicts and rising international demand.

5. **Focus on Long-Term Capability Building:** Defence preparedness should combine industrial capacity, technological innovation and sustained investment so that India can meet its future security needs independently.

Conclusion

The Ankara Summit reflects a long-term shift towards higher defence spending, stronger industrial capacity and advanced military technologies. As global competition for defence equipment increases, India cannot rely heavily on external suppliers. Strengthening indigenous defence manufacturing, developing emerging technologies and building resilient supply chains will be essential to ensure long-term defence preparedness and strategic autonomy.

Question for practice:

Discuss the key outcomes of NATO's Ankara Summit and examine the warning signals it presents for India's defence preparedness and self-reliance.
Source: The Hindu

Reclaiming Footpaths in Indian Cities

Introduction

Indian cities have become increasingly vehicle-centric, leaving pedestrians to face unsafe roads, broken footpaths and frequent encroachments. Poor walking infrastructure affects road safety, public health and

inclusive urban mobility. Recognising these concerns, the Supreme Court in *Maniyar Iliyaz @ Shaik Riyaz v. P. Ayyappan (2026)* held that walking on safe footpaths is a Fundamental Right under Articles 19(1)(d) and 21, making pedestrian safety a constitutional responsibility.

Supreme Court's Recognition of the Right to Walk

1. **Recognition as a Fundamental Right:** The Supreme Court held that walking on safe footpaths is protected under **Article 19(1)(d)** (freedom of movement) and **Article 21** (right to life). It recognised pedestrians as equal users of public roads.

2. **Judgment Triggered by a Preventable Tragedy:** The ruling followed the death of a five-year-old child who was hit by a tanker while walking to school because there was no footpath or pedestrian crossing. The Court observed that such accidents will continue unless roads are redesigned for safe pedestrian movement.

3. **Limits of Existing Law:** The Court noted that the **Motor Vehicles Act, 1988** mainly protects motor vehicles and does not recognise a fundamental Right to Walk. This has weakened the legal protection available to pedestrians.

4. **Shift from Vehicle-Centric Planning:** The Court criticised the focus on flyovers, expressways and wide roads while ignoring pedestrians. It stressed that footpaths should be continuous, safe, accessible, walkable and free from obstruction.

5. **Pedestrians Have Equal Rights on Roads:** The judgment rejected the idea that roads belong mainly to motor vehicles. It affirmed that walking is a constitutional right and not a privilege granted by the State.

Importance of Walkable Cities

1. **Protection of Life and Human Dignity:** Safe footpaths reduce the risk of accidents and allow citizens to move with dignity. Pedestrian safety therefore becomes a constitutional responsibility rather than only a traffic issue.

2. **Improving Public Health:** Walking is one of the simplest and lowest-cost ways to reduce diabetes, hypertension, fatty liver disease and obesity. Safe footpaths make regular physical activity possible in daily life.

3. **Addressing Physical Inactivity:** According to the **WHO India Physical Activity Profile 2024**, **49.4%** of adults, **57.2%**of women and **74%** of children aged **11–17 years** do not meet the recommended level of physical activity. **WHO**recommends at least **150 minutes** of moderate-intensity physical activity every week for adults.

4. **Safer and Inclusive Mobility:** Functional footpaths help children reach schools safely, support older persons, improve mobility for women and remove barriers for persons with disabilities. They make public infrastructure accessible to all sections of society.

5. **Road Safety Benefits:** According to **Road Accidents in India 2024**, pedestrians and two-wheeler riders together accounted for nearly **67%** of road fatalities, with around **1.28 lakh deaths**. **NCRB 2024** also reported that these vulnerable groups accounted for at least **60%** of road deaths.

6. **Environmental and Economic Benefits:** A **2019 Chennai study** found that **9% to 27%** of people shifted from motorised transport to walking after new footpaths were built. This reduced greenhouse gas emissions, particulate pollution and transport costs while promoting healthier lifestyles.

7. **Strengthening Public Spaces:** Well-planned footpaths are more than walking paths. They function as shared public spaces that improve everyday mobility and make cities more people-friendly.

Challenges to Pedestrian Rights

1. **Poor Pedestrian Infrastructure:** Many footpaths are broken, dug up, blocked or end abruptly, forcing pedestrians onto busy roads. The absence of safe crossings further increases accident risks.

2. **Vehicle-Centric Urban Planning:** Urban development has largely focused on roads for motor vehicles. This approach has treated pedestrians as obstacles instead of rightful road users.

3. **Encroachments and Competing Uses:** Footpaths are often occupied by parked vehicles, street vendors, debris, open drains and utility structures. At the same time, many homeless people use pavements for shelter, creating competing claims over limited public space.

4. **Accessibility Barriers:** Poles, trees, potholes and uneven pavements make movement difficult for persons with disabilities, older persons and children. Many footpaths also lack ramps and barrier-free access.

5. **Unsafe Walking Environment:** Many citizens prefer to walk or use public transport, but the absence of continuous, shaded and well-maintained footpaths discourages active mobility and increases dependence on private vehicles.

Measures to Reclaim Footpaths

1. **Strengthen Legal Enforcement:** Constitutional recognition alone is not enough. State Governments and municipal bodies should frame enforceable rules and ensure regular maintenance of safe, obstruction-free footpaths.
2. **Develop Pedestrian-First Infrastructure:** Every road project should include continuous, shaded, well-lit and barrier-free footpaths with safe pedestrian crossings. Footpaths should be wide enough for two people or a wheelchair and include ramps near bus stops.
3. **Ensure Fair Management of Public Spaces:** Cities should allocate separate spaces for walking, street vending, parking and public utilities. This protects pedestrians while addressing the livelihood needs of street vendors.
4. **Improve Urban Design:** Roads near schools, hospitals, markets, bus stops and metro stations should receive priority. Trees, benches, public toilets and lighting should be treated as essential pedestrian infrastructure.
5. **Launch a National Active Mobility Mission:** India should link urban development, transport, health and education to promote walking. Cities should be assessed by the number of safe walking kilometres created rather than only the length of roads or flyovers.
6. **Strengthen Municipal Accountability:** Municipal Commissioners should publish ward-level footpath maps and annual audits of encroachment-free footpaths to improve transparency and implementation.

7. **Promote Active Mobility and Citizen Participation:** Citizens should walk for short trips, combine walking with public transport and form community walking groups. Schools, employers and doctors should also encourage walking as part of daily life.

Conclusion

The Supreme Court has transformed safe walking from a municipal concern into a Fundamental Right. Realising this right now requires better planning, effective enforcement and active civic participation. Safe, accessible and encroachment-free footpaths will strengthen public health, road safety and inclusive mobility. The quality of footpaths should become an important measure of constitutional governance and people-centred urban development.

Question for practice:

Examine the significance of reclaiming footpaths in Indian cities for ensuring pedestrian rights, public health and inclusive urban development.
Source: The Hindu

Fire Safety as a Critical Component of Urban Governance

Syllabus- GS 1- Urbanization, their problems and their remedies
Introduction
A series of recent fire incidents in hospitals, hotels, coaching centres, and high-rise buildings has highlighted the growing vulnerability of Indian cities to fire hazards. These incidents reflect deeper structural issues such as rapid and unplanned urbanisation, outdated regulations, and weak enforcement of safety norms. As India urbanises rapidly, fire safety has emerged as a critical component of urban governance, encompassing urban planning, infrastructure, institutional accountability, and disaster risk reduction

1. Structural Drivers of Fire Risk

- **Fast-paced urbanisation**: According to NITI Aayog, India's urban population is growing at roughly 2.7–2.8% annually, while urban built-up area is expanding at nearly double that rate - a mismatch that strains existing safety infrastructure.
- **Mixed land use**: Commercial coaching hubs, chemical storage units, and small manufacturing units increasingly operate within dense residential areas, placing combustible materials close to large populations.
- **Vertical growth outpacing capability**: The boom in high-rises to maximise real estate value has outstripped the reach of conventional firefighting equipment such as hydraulic ladders and high-pressure hoses.
- **Urban bottlenecks**: Narrow roads, encroachments, and tangled overhead wiring routinely delay fire tenders from reaching incident sites during the crucial first minutes of a fire.

2. Governance and Accountability Gaps

Fire safety responsibility in India is fragmented across multiple actors:

- Fire No-Objection Certificates (NOCs) are treated as a **one-time administrative formality** for occupancy certificates, not an ongoing safety commitment.

- Building bye-law violations are often treated as minor civil infractions rather than serious offences.
- Electricity distribution companies (DISCOMs) frequently release power connections without mandatory structural load audits of internal wiring.

This fragmentation among urban local bodies, electrical inspectors, and law enforcement produces a reactive, post-disaster response system rather than proactive risk reduction.

3. Constitutional and Regulatory Framework

- Fire services fall under the **State List**, further decentralised to Urban Local Bodies (ULBs) under **Article 243W (Twelfth Schedule)**.
- This results in no uniform national fire safety regime — regulations, budgets, and enforcement capacity vary widely across states.
- The **National Building Code (NBC), 2016**, issued by the Bureau of Indian Standards, sets technical benchmarks for fire compartmentation and egress (escape routes) based on occupancy load, but these remain **advisory** until adopted into local building laws.
- The **15th Finance Commission** allocated ₹5,000 crore under the NDRF for the **Scheme for Expansion and Modernisation of Fire Services (SEMFSS)**, on a 75:25 cost-sharing basis (90:10 for North-Eastern and Himalayan states).
- The Ministry of Health and Family Welfare has issued model guidelines mandating evacuation infrastructure and smoke management systems in high-risk zones like ICUs and neonatal units.

4. Core Implementation Gaps

- **No periodic safety audits**: Absence of a statutory requirement for audits after the initial NOC allows unsafe structural modifications and non-functional fire equipment to go unnoticed.
- **Electrical faults**: NCRB data shows short circuits cause about 17% of fire deaths nationally, and over 75% of urban structural fires in metros like Delhi and Mumbai. Rising power loads (ACs, appliances) without wiring upgrades or Arc Fault Circuit Interrupters (AFCIs) compound the risk.
- **Combustible building materials**: Widespread use of Aluminium Composite Panel (ACP) cladding — largely unregulated — allows small fires to bypass compartmentation and engulf entire high-rises rapidly.

Way Forward

- **Institutional strengthening**: Upgrade state fire services into independent statutory authorities empowered to conduct unannounced audits, issue binding compliance notices, and seal non-compliant structures.
- **Market-based compliance**: Link commercial property insurance renewals to third-party fire safety audits, using premium incentives to encourage compliance.
- **Technology integration**: Mandate AFCIs in building codes and integrate IoT-enabled smoke detectors with city Integrated Command and Control Centres (ICCCs) under the Smart Cities Mission for real-time alerts.
- **Capacity building**: Establish micro-fire stations in congested commercial zones and conduct mandatory fire drills in hospitals, schools, and coaching institutes to prevent panic-driven casualties like stampedes.

- **Alignment with global frameworks**: Integrate fire risk governance with Priorities 2 and 3 of the **Sendai Framework for Disaster Risk Reduction (2015–2030)** — strengthening disaster risk governance and investing in risk reduction.

Conclusion

Fire safety in India sits at the intersection of urban planning, constitutional federalism, and administrative accountability. As the country pursues the vision of Viksit Bharat by 2047, ensuring fire-safe cities is not merely a technical requirement but a marker of genuine urban development. A shift from reactive, certificate-based compliance to proactive, technology-enabled, and audit-driven governance is essential to prevent avoidable urban tragedies and safeguard the lives of citizens.

Question for Practice-. Fire safety has emerged as a critical challenge in India's urban governance. Discuss the constitutional and institutional gaps in the existing fire safety framework and suggest measures to strengthen urban fire governance.

Source- IE

India's Move Towards Polymer Currency

Syllabus- GS 2/GS 3- Government policies and interventions for development/Indian Economy and issues relating to planning, mobilization of resources

Introduction

The Reserve Bank of India, through its note-printing subsidiary Bharatiya Reserve Bank Note Mudran Pvt. Ltd. (BRBNMPL), has floated a global Expression of Interest (EOI) for procuring Biaxially Oriented Polypropylene (BOPP) substrate embedded with advanced security features. This marks the strongest step yet toward introducing plastic currency in India since the idea was first proposed in 2009. As India seeks to modernise its physical currency ecosystem alongside the rapid rise of digital payments, the move raises important questions of cost, durability, security, sustainability, and self-reliance.

Opportunities of Polymer Currency

1. Greater Durability-Polymer notes last 2.5 to 4 times longer than conventional cotton-paper currency. Since lower denominations such as ₹10 and ₹20 see the heaviest circulation and wear, these are likely to be introduced first, easing pressure under the RBI's Clean Note Policy.

2. Stronger Counterfeit Resistance- Polymer substrates allow security features that are far harder to replicate than those on paper notes — transparent windows, metallic numerals, magnetic pseudo-threads, holograms, shadow images, iridescent patterns, and tactile markings for the visually impaired.

3. Improved Currency Management- Although polymer notes have higher initial production costs, their longer lifespan reduces expenditure on printing, transport, storage, and disposal. The RBI spends around ₹5,000 crore annually on currency management, while India destroys 20–24 billion soiled notes every year—costs that polymer notes could significantly reduce.

4. Environmental Gains-A TERI study commissioned by the RBI found that the longer lifespan of polymer notes could lower the need for repeated manufacturing and transport, giving them a smaller overall lifecycle carbon footprint compared to paper notes. Used polymer notes can also be recycled into other plastic products.

5. Global Precedent- Australia was the first country to fully adopt polymer currency, and nearly 60 countries - including Canada, the United Kingdom, New Zealand, Mexico, Brazil, Saudi Arabia, Romania, and Barbados - now use polymer notes in some form. Their experience broadly points to improved durability, enhanced security, and lower lifecycle costs despite higher initial production expenses.

Challenges in Adopting Polymer Currency

1. Higher Production Costs-Polymer notes cost 30–60% more to manufacture than paper notes, and in some countries, low-value polymer notes have cost as much as 20–24% of their face value to produce. Transitioning would also require recalibrating ATMs, note-sorting machines, vending machines, and cash-handling infrastructure nationwide.

2. Environmental Trade-offs-Since polymer notes are made from polypropylene, a petroleum-based material, their initial production carries a higher carbon footprint, demands specialised recycling facilities, and deepens dependence on fossil-fuel-derived raw materials.

3. Import Dependence-India currently imports around one-fifth of its polypropylene requirement, exposing note production to volatility in global crude oil prices — a risk heightened by geopolitical tensions in West Asia. This is despite domestic capacity expansion being planned by companies such as Reliance Industries and Indian Oil Corporation.

4. Relevance in a Digitalising Economy- Despite UPI processing over 24,000 crore transactions annually (about 85% of retail digital payments), currency in circulation has exceeded ₹41 lakh crore in 2025–26, with the currency-to-GDP ratio remaining above 11%. This reflects sustained cash demand due to the large informal economy, uneven digital infrastructure, and the continued importance of cash for financial inclusion and small-value transactions.

5. Past Setbacks- The RBI proposed polymer ₹10 notes in 2009, followed by a pilot in 2012 across five cities. However, the project was shelved due to technical challenges and the disruption caused by the 2016 demonetisation and currency redesign. The proposal has been revived in 2026 through BRBNMPL's global EOI, with field trials planned for ₹10 and ₹20 notes.

Way Forward

- Launch limited pilot projects for lower-denomination notes before scaling to a nationwide rollout.
- Promote domestic manufacturing of polymer substrates to reduce import dependence.
- Undertake thorough cost-benefit analysis and environmental impact assessments before wider adoption.
- Upgrade ATM and cash-handling infrastructure in a phased, non-disruptive manner.
- Allow paper and polymer notes to circulate together during the transition, avoiding any demonetisation-like shock.
- Align the currency reform with India's broader goals of Digital India, financial inclusion, and efficient cash management.

Conclusion

India's shift toward polymer currency reflects an effort to modernise its cash ecosystem through greater durability, tighter security, and improved lifecycle efficiency. Yet, concerns around cost, environmental impact, and import dependence call for a calibrated, evidence-based approach rather than a hurried transition. The

objective should not be to simply replace paper with plastic, but to build a currency system that is cost-effective, secure, and sustainable - one suited to India's evolving and increasingly digital payments landscape.

Question for Practice- Discuss the opportunities and challenges associated with the introduction of polymer currency in India. How can the transition be made cost-effective and sustainable?

Source- IE

India's Foreign Policy Must Look Seaward

UPSC Syllabus: Gs Paper 2- Effect of policies and politics of developed and developing countries on India's interests,
Indian diaspora.

Introduction

India has emerged as one of the world's largest suppliers of seafarers, with **about 3.2 lakh seafarers (June 2025)** and **over 12% of the global workforce**. However, Indian seafarers work across multiple countries, legal systems and conflict zones, making responsibility for their safety, legal protection and repatriation difficult to determine. As maritime security risks increase, protecting Indian seafarers has become an important dimension of India's maritime governance and foreign policy.

Why Indian Seafarers Need Greater Foreign Policy Attention

1. **India's Expanding Maritime Workforce:** India had **about 3.2 lakh seafarers** in **June 2025**, nearly three times its strength in 2014. The **2026 Seafarer Workforce Report** ranks India **second after the Philippines**, contributing **just over 12% of the global seafaring workforce**.

2. **Global Nature of Seafaring Employment:** An Indian seafarer may be recruited in India, employed by a foreign company, work on a vessel registered in another country and operate in different international waters. This makes responsibility for their safety and rescue difficult to identify.

3. **Mobile Workplace Creates Protection Challenges:** Seafarers work abroad without permanently living abroad, and their workplace constantly changes. During one voyage, they may pass through several jurisdictions, while Indian missions may not know their location until an emergency occurs.

4. **Foreign Policy Beyond Shipping:** Seafarers are often treated as a shipping issue during normal times and become a consular issue only after a crisis. India needs to view them as an important foreign policy responsibility even before emergencies arise.

5. **Human Cost of Maritime Conflicts:** Since **February 2026**, **14 Indians** have lost their lives in attacks linked to the West Asia conflict, including **at least eight commercial seafarers**.

6. **Growing Threats Across Sea Routes:** Maritime risks now extend beyond West Asia. Ships face **missiles, drones and mines** in the **Black Sea and Red Sea**, while piracy and hostage-taking continue around the **Gulf of Aden and West Africa**.

Challenges in Protecting Indian Seafarers

1. **Fragmented Responsibility During Emergencies:** Responsibility is divided among the **flag State, shipowner, insurer, port authority and Indian mission**. This often creates confusion over who should rescue, assist or repatriate Indian seafarers.

2. **Crew Abandonment Remains a Serious Concern:** According to the **International Transport Workers' Federation**, **1,125 Indian seafarers were abandoned in 2025**, the highest number reported for any country. Such cases often move between several authorities before any action is taken.

3. **Territorial Consular System Has Limitations:** Indian missions are organised according to national territories, while seafarers move continuously across international waters. This limits timely consular support during maritime emergencies.

4. **Technology Has Limited Value During Emergencies:** Ship-tracking systems and monitoring dashboards can locate a vessel, but they cannot confirm the crew's condition, compel shipowners or flag States to act, or secure access to detained seafarers. Continuous tracking of every vessel is also not practical.

5. **Weak Enforcement by Flag States:** Some flag States register ships quickly but fail to enforce the **Maritime Labour Convention** when wages stop, crews are abandoned or repatriation becomes necessary.

6. **Limited Protection in Maritime Agreements:** India's bilateral maritime agreements mainly recognise Indian certificates and improve employment opportunities. They provide little support for **legal assistance, consular access and repatriation**.

Government Initiatives and Recent Measures

1. **Seafarer First Response:** Following recent attacks in West Asia, the Government launched the **Seafarer First** response to account for every Indian seafarer in the region, irrespective of the vessel's flag.

2. **Monitoring Dashboard and Family Support:** A dedicated dashboard tracks ships, security threats and crew welfare. Every affected family is also assigned a liaison officer for regular communication.

3. **Advisory for High-Risk Waters:** On **15 July**, the Government advised shipowners, managers and recruitment agencies not to deploy Indian seafarers on vessels passing through the **Strait of Hormuz** until further orders. Similar arrangements should continue whenever any maritime region becomes high-risk.

4. **Continuous Security Monitoring:** The **Ministry of Ports, Shipping and Waterways**, **Directorate General of Shipping**, **Ministry of External Affairs**, **Indian Navy**, Indian missions and other stakeholders are jointly monitoring the security situation in the **Strait of Hormuz, Gulf of Oman and nearby waters**.

5. **Maritime Security Protocols:** Indian and foreign-flagged vessels carrying Indian seafarers have been advised to maintain the highest level of vigilance, follow maritime security protocols and continuously monitor official advisories.

6. **Emergency Response Mechanism:** Stakeholders have been directed to report every incident involving Indian seafarers immediately. Dedicated communication channels and round-the-clock emergency response systems remain operational to support seafarers and their families.

7. **Assistance After the MT Settebello Attack:** After the missile attack on **MT Settebello**, the Government coordinated with all concerned authorities, shipowners and recruitment agencies. The rescued crew were assisted, the deceased were identified for repatriation and **₹10 lakh** assistance was announced for each affected family through the **Seafarers Welfare Fund Society**.

What More Should India Do?

1. **Standing Maritime Consular Protocol:** India should establish a permanent maritime consular protocol that clearly identifies the authority responsible from the moment a distress signal is received. Whenever the system is activated, recruitment agencies should also provide updated crew details and voyage information received from shipowners and managers.

2. **Dedicated Maritime Officers in Indian Missions:** Indian missions in major shipping centres should appoint designated officers familiar with port authorities, hospitals, insurers and local lawyers. Such networks should be built before emergencies occur.

3. **Ensure Compliance by Flag States:** Some flag States register ships quickly but fail to enforce the **Maritime Labour Convention** when wages stop, crews are abandoned or repatriation is delayed. India should press them to fulfil these obligations.

4. **Strengthen Bilateral Maritime Agreements:** Existing maritime agreements mainly recognise Indian certificates and improve employment opportunities. They should also include **legal assistance, consular access and repatriation** for Indian seafarers.

5. **Promote Common International Standards:** India, the **Philippines** and **Indonesia** face similar challenges as major suppliers of global seafarers. They should jointly push for common standards on **repatriation, detention and deployment in conflict zones** through the **International Maritime Organization** and the **International Labour Organization**.

6. **Protect Commercial Shipping from Conflict:** Civilian crew members should not become targets because of the cargo carried or disputes involving shipowners. India should oppose attacks on commercial shipping, regardless of who carries them out.

7. **Strengthen Seafarers' Right to Information:** Before signing a contract, every seafarer should know the vessel's real owner, trading route, sanctions status, insurance validity and any previous record of crew abandonment. This information should be shared before employment.

8. **Protect the Right to Refuse High-Risk Deployment:** If a vessel is later directed to enter a designated high-risk region, seafarers should have the right to refuse deployment and return home without any penalty.

9. **Increase Recruitment Agency Accountability:** The **Directorate General of Shipping** has prohibited licensed recruitment agencies from placing Indian seafarers on **366 vessels** linked to crew

abandonment unless prescribed conditions are met. Agencies should disclose this information before recruitment and face penalties for violations.

Conclusion

India's maritime ambitions should be measured not only by ports, shipping corridors and naval strength but also by how effectively it protects its seafarers. Indian citizens working at sea deserve timely protection and support wherever they are employed. A robust maritime foreign policy should ensure **clear accountability, timely consular assistance, effective international cooperation and stronger legal safeguards**. This will help safeguard Indian seafarers regardless of the flag under which their vessel sails.

Question for practice:

Discuss the challenges faced by Indian seafarers and examine the measures needed to strengthen their protection through India's foreign policy.
Source: The Hindu

India's Prudent Tax Administration

UPSC Syllabus: Gs Paper 3- Indian economy and Infrastructure
Introduction
India's tax administration has evolved from ancient principles of public revenue to a modern, technology-driven and information-based system. Continuous tax reforms have simplified laws, improved transparency and strengthened compliance. The **Income-tax Act, 2025**, which came into force from **FY 2026–27**, marks a significant milestone by replacing a six-decade-old law. Supported by digital governance and information-driven administration, it lays the foundation for a prudent, transparent and taxpayer-centric tax system.
Evolution of India's Tax Administration

1. **Ancient Taxation Tradition:** India has a long history of taxation. **Kautilya's Arthashastra** recognised public revenue as the foundation of good governance and viewed taxation as an important tool for the welfare of the state.

2. **Modern Income Tax System: Sir James Wilson** introduced income tax in British India on **24 July 1860**. Every **Income Tax Day** commemorates this milestone and reflects the continuous evolution of India's direct tax system.

3. **Taxation after Independence:** After **1947**, taxation became an important instrument to finance development, maintain fiscal prudence and support economic stability during challenges such as inflation, balance-of-payments crises and the **COVID-19 pandemic**.

4. **High-tax and Regulated System:** During the **1960s and 1970s**, India followed a highly regulated economic model with very high personal income tax rates. Heavy taxation and extensive controls encouraged tax evasion and made the tax system less efficient.

5. **Beginning of Tax Reforms:** During the **1980s**, the government started simplifying tax laws, reducing excessive tax rates and broadening the tax base. These reforms also focused on improving tax administration and compliance.

6. **Economic Liberalisation:** The **1991 economic reforms** reduced personal and corporate tax rates and lowered customs duties to promote trade and economic growth. The focus shifted towards a simpler and more competitive tax system.

7. **Digital Transformation of Tax Administration:** From the **2000s onwards**, reforms such as **Permanent Account Number (PAN)**, electronic filing, digital tax services and **Value Added Tax (VAT)** modernised tax administration. In the **2020s**, greater use of data analytics, Artificial Intelligence, pre-filled income tax returns and online grievance systems further strengthened digital compliance.

Modern Tax Reforms

1. **Income-tax Act, 2025:** The **Income-tax Act, 2025**, effective from **FY 2026–27**, replaced a law that had governed direct taxation for more than six decades. It reflects the need to modernise tax laws in line with a rapidly changing economy.

2. **Simplified Legal Framework:** The new Act uses simpler language, adopts a **single Tax Year**, reorganises provisions that had become fragmented over time and introduces concepts suited to an increasingly digital economy.

3. **Better Compliance and Lower Disputes:** A clearer and more accessible law makes compliance easier for taxpayers, professionals and administrators. It also helps reduce disputes and improves the efficiency of tax administration.

4. **Legislative Reform is the Beginning:** Rewriting the law alone is not enough. The next stage of tax administration depends on making better use of information and technology to improve compliance and governance.

Information-driven Tax Administration

1. **Shift in Tax Administration:** Earlier, tax authorities depended mainly on taxpayer disclosures, returns, audits and assessments because taxpayers possessed most financial informations.
2. **Digital Financial Records:** Banks, employers, securities markets and property registries generate digital records that create a comprehensive financial trail. This enables tax authorities to make better use of existing information.
3. **Global Tax Cooperation:** More than **100 jurisdictions** exchange financial information through the **OECD Common Reporting Standard (CRS)**, while the **OECD Pillar Two** framework addresses profit shifting.
4. **India's Opportunity:** India is well placed to lead this transition because it has integrated identity, financial reporting and tax administration at an unmatched scale.

India's Digital Tax Ecosystem

1. **Integrated Tax Information System:** India has developed one of the world's most comprehensive tax information ecosystems by integrating identity, financial reporting and tax administration.

2. **Connected Digital Platforms: PAN-Aadhaar linkage**, the **Annual Information Statement (AIS)**, **Goods and Services Tax (GST)** integration and **Tax Deducted at Source (TDS)** reporting create a comprehensive financial profile for taxpayers.

3. **Technology-driven Tax Services:** Digital taxpayer services, online filing, pre-filled income tax returns and electronic verification have made tax compliance simpler and more convenient.

4. **Faceless Tax Administration: Faceless assessment** and **faceless verification** reduce direct interaction between taxpayers and tax officials. This promotes greater transparency, fairness and efficiency.

5. **Foundation for Better Governance:** Together with the **Income-tax Act, 2025**, India's digital ecosystem supports a tax administration that is simpler, more efficient and more responsive.

Future Priorities for Prudent Tax Administration

1. **Technology-enabled Compliance:** Technology should increasingly help taxpayers comply correctly the first time instead of only detecting errors after they occur..

2. **Responsible Use of Artificial Intelligence:** Artificial Intelligence offers significant opportunities for tax administration, but it should support human judgment rather than replace it.

3. **Transparency and Accountability:** Decisions affecting taxpayers should remain transparent, explainable and subject to appropriate review. Strong data security and accountability are equally important.

4. **Trust and Voluntary Compliance:** Future reforms should build institutions that inspire public trust and encourage voluntary compliance rather than relying only on enforcement.

5. **Towards Viksit Bharat @ 2047:** Guided by **Kautilya's** principle that **"Kosha Mulo Danda"** (Revenue is the foundation of good governance), India should use responsible technology and trusted institutions to build a modern and globally respected tax system.

Conclusion

India's tax administration has evolved from a traditional revenue collection system into a transparent, technology-driven and information-based framework. The **Income-tax Act, 2025**, digital reforms and integrated tax ecosystem have strengthened efficiency, compliance and taxpayer services. Going forward, balanced enforcement, responsible use of technology, public trust and voluntary compliance will be essential to build a prudent and globally respected tax administration that supports **Viksit Bharat @ 2047**.

Question for practice:
Examine how tax reforms and digital governance have transformed India's tax administration into a prudent and taxpayer-centric system.
Source: Businessline

India's Mobile Phone Manufacturing Story

Source: The post "India's Mobile Phone Manufacturing Story" has been created based on "Factory reset" published in "Business Line" on 27th July 2026.

UPSC Syllabus: GS-3 - Economy

Context: India's mobile phone manufacturing sector has witnessed remarkable growth under the Production Linked Incentive (PLI) scheme. However, domestic value addition has remained low because most high-value components are still imported. The new **₹62,500-crore Mobile Phone Manufacturing Scheme (MPMS)** aims to increase localization, promote component manufacturing, and strengthen India's position in the global electronics value chain.

Achievements of India's Mobile Phone Manufacturing Sector

1. India has increased the number of mobile phone manufacturing units from **2 in 2014 to more than 300** today.
2. Mobile phone production has grown from **₹18,000 crore to nearly ₹5.5 lakh crore**.
3. India now produces around **325–330 million mobile handsets annually**.
4. Domestic manufacturing now meets almost the **entire demand for mobile phones** in the country.
5. Mobile phone exports have increased from **₹1,566 crore to over ₹2.6 lakh crore**, making smartphones one of India's fastest-growing export categories.
6. The **PLI scheme has played a major role** in transforming India into a global mobile phone assembly hub.

Limitations of the PLI Scheme

1. India has largely specialized in the **assembly of mobile phones rather than manufacturing high-value components**.
2. Most components such as **chipsets, displays, camera modules, printed circuit boards, and other electronic parts** continue to be imported.
3. Domestic value addition has remained **around 20%**, despite the rapid growth in production.
4. India's electronics import bill has crossed **$110 billion in FY26** because of continued dependence on imported components.
5. The PLI scheme mainly rewarded **incremental production instead of encouraging deeper localization**.

Ways in which the Mobile Phone Manufacturing Scheme (MPMS) Improves Upon PLI

1. The MPMS shifts the policy focus from increasing production to **enhancing domestic value addition**.
2. Manufacturers will receive **incentives ranging from 2.25% to 5% on eligible sales**.
3. The scheme provides **additional incentives for sourcing components and sub-assemblies from domestic manufacturers**.
4. Companies investing in **product design and research and development (R&D)** will receive extra incentives.
5. The scheme encourages India to become a center for **innovation as well as manufacturing**.

The Mobile Phone Manufacturing Scheme Has Been Introduced at an Opportune Time

1. Global supply chains have changed because of the **COVID-19 pandemic, geopolitical tensions, and trade restrictions**.
2. Many multinational companies are adopting **China+1 and friend-shoring strategies** to diversify their manufacturing bases.
3. India has already emerged as a preferred destination for **final assembly of mobile phones**.
4. The next stage of growth requires the **development of a strong domestic supplier ecosystem**.

Role of MPMS Along with ISM 2.0

1. The MPMS will complement the proposed **₹1.25 lakh crore India Semiconductor Mission (ISM) 2.0**.
2. Both initiatives aim to promote **component manufacturing along with handset production**.
3. These initiatives can significantly **reduce India's dependence on imported electronic components**.

Challenges Ahead

1. Financial incentives alone cannot create a globally competitive electronics manufacturing ecosystem.
2. Component manufacturing requires **reliable infrastructure** for efficient production.
3. The sector also requires **affordable logistics** to reduce production costs.
4. India needs to develop a **skilled workforce** to support advanced manufacturing.
5. A **predictable regulatory environment** is essential to attract long-term investments.
6. Private companies must view these schemes as an opportunity for **long-term investment rather than short-term subsidies**.

Lesson from India's Automobile Industry

1. India's automobile industry became globally competitive because it developed **strong supplier networks around manufacturing clusters**.
2. The mobile phone industry must also build a **dense domestic supplier ecosystem** to move beyond assembly and increase value addition.

Way Forward

1. Ensure the effective implementation of MPMS and ISM 2.0 to strengthen the electronics ecosystem.
2. Promote domestic manufacturing of high-value components to increase value addition.
3. Improve infrastructure, logistics, and power supply to enhance competitiveness.
4. Strengthen skill development for advanced electronics manufacturing.
5. Maintain a stable and predictable regulatory environment to attract long-term investments.
6. Encourage R&D and product design to transform India into an innovation-driven manufacturing hub.
7. Develop manufacturing clusters with strong supplier networks to support component manufacturing.
8. Encourage long-term private investment beyond government incentives.

Conclusion: The Mobile Phone Manufacturing Scheme marks a significant policy shift from promoting assembly to encouraging localization, component manufacturing, and innovation. If it is supported by strong infrastructure, skilled manpower, regulatory stability, and long-term private investment, the scheme can help India reduce import dependence and emerge as a major global electronics manufacturing hub.

Question: "The Production Linked Incentive (PLI) scheme transformed India into a major mobile phone assembly hub, but deeper localization remains a challenge." Discuss how the Mobile Phone Manufacturing Scheme (MPMS) seeks to address this gap.

Source: Business line

Missing the Second Demographic Bonus

Source: The post "Missing: Second demographic bonus" has been created based on "Missing: Second demographic bonus" published in "New Indian Express" on 27th July 2026.

UPSC Syllabus: GS-3 - Economy

Context: India is experiencing a demographic dividend as the share of its working-age population continues to rise. However, household savings have declined to their lowest level in nearly two decades despite the growing working-age population. This indicates that India is yet to realize the **second demographic dividend**, which refers to wealth accumulation through savings and investments.

About Second Demographic Dividend

1. The **first demographic dividend** refers to higher economic growth resulting from a rising share of the working-age population.
2. The **second demographic dividend** refers to the increase in household savings and wealth accumulation as people save during their working years to support themselves in old age.
3. The second demographic dividend depends on strong institutions such as pensions, formal financial systems, and efficient labour markets.

Factors Responsible for the Decline in India's Household Savings Despite a Rising Working-Age Population

1. Weak Employment and Income Generation

a. A large share of the working-age population is either unemployed, underemployed, or engaged in informal employment.
b. Many workers earn low and unstable incomes, leaving little surplus for savings.
c. Therefore, a growing working-age population has not translated into a proportionately larger saving population.

2. Low Female Labour Force Participation

a. Female labour force participation remains low despite recent improvements.
b. A significant proportion of women continue to work in the informal sector with limited and irregular incomes.
c. As a result, nearly half of the potential workforce is unable to contribute fully to household savings.

3. Weak Social Security and Pension Coverage

a. Formal pension coverage is available to only a small proportion of Indian workers.
b. Social security arrangements for workers in the informal sector remain inadequate.
c. Households lack confidence in retirement security, limiting their ability to build long-term financial assets.

4. Decline of Traditional Family Support Systems

a. Smaller and geographically dispersed families have weakened the traditional system of children supporting elderly parents.
b. India is ageing faster than it is developing institutional mechanisms for old-age security.

5. Rising Consumption and Household Borrowing

a. Household borrowing through unsecured retail loans, credit cards, and consumer durable loans has increased significantly.
b. Consumption expenditure has grown faster than household savings.
c. A young population is increasingly financing present consumption instead of accumulating wealth.

6. Rising Debt Burden

a. Household debt has increased while financial asset accumulation has remained slow.
b. This has reduced the capacity of households to save for future needs.

International Comparison

1. Countries such as **Japan, South Korea, and China** recorded high household savings when their working-age populations peaked.
2. These countries converted their demographic dividend into a large pool of domestic capital through strong institutions and formal employment.
3. In contrast, India's household savings are declining even as its working-age population continues to increase.

Implications

1. Lower household savings reduce the availability of domestic capital for investment.
2. Greater dependence on government borrowing and external sources of finance may increase economic vulnerabilities.
3. India may fail to fully utilize its demographic dividend before the population begins to age.

Measures to Realize the Second Demographic Dividend

1. The government should promote quality employment and increase incomes through productive job creation.
2. Female labour force participation should be increased by improving employment opportunities and working conditions.
3. Pension coverage and social security should be expanded, especially for workers in the informal sector.
4. The formal financial system should be strengthened to encourage long-term household savings.
5. Household credit should be regulated to discourage excessive consumption-driven borrowing.
6. Policies should promote financial literacy and long-term investment habits among households.

Conclusion: India's demographic dividend alone cannot guarantee higher savings and long-term economic growth. The country must complement its favourable age structure with productive employment, strong financial institutions, wider social security, and greater financial inclusion. Only then can India convert its demographic advantage into a sustainable **second demographic dividend** that supports long-term investment and economic development.

Question: India's demographic dividend has not translated into a 'second demographic dividend' in the form of higher household savings. Examine the reasons and suggest measures to realize the second demographic dividend.

Source: New Indian Express

Why is China's AI Push Gaining Ground?

UPSC Syllabus: Gs Paper 2 - international relations And Gs paper 3- science and technology

Introduction

China has rapidly emerged as a strong competitor in the global artificial intelligence (AI) race. Despite restrictions on advanced chips, it has narrowed the gap with the United States by focusing on **open-source AI models, cost-efficient innovation, strong government support, and a broad AI ecosystem**. This approach has increased the global adoption of Chinese AI models and reshaped competition in the AI sector.

China's Rise as a Global AI Power

1. **Rapid Catch-up with the U.S.:** China has reduced the gap with the United States in advanced AI from several years to only a few months. Models such as **Kimi K3** now perform close to, and in some benchmarks even match, leading U.S. models like **Claude**.

2. **Competitive AI Models:** Chinese companies have released several high-performing models, including **DeepSeek, Kimi K3, Qwen and MiMo**. These models are increasingly used by businesses, government services and developers.

3. **Performance at Lower Cost: Kimi K3**, a **2.8 trillion-parameter** model, delivers strong performance while using much less computing power. It provides advanced AI capabilities at a much lower cost than many frontier U.S. models.

4. **From Follower to Challenger:** China has moved beyond copying foreign technology and is now producing globally competitive AI systems. Its AI companies are challenging the long-standing dominance of leading U.S. firms.

5. **Growing Global Recognition:** Chinese AI models have been downloaded **millions of times** from platforms such as **Hugging Face**. Developers are adapting them for specialised and local use cases it.

Key Drivers Behind China's AI Success

1. **Open-Source AI Strategy:** Many Chinese AI companies release **open-source or open-weight models**, allowing businesses and developers to download, modify and run them on their own systems. This has accelerated innovation and wider adoption.

2. **Long-Term Government Support:** China has consistently invested in AI research and encouraged both research laboratories and large technology companies to develop AI models. This long-term planning has strengthened the country's AI ecosystem.

3. **Strong Industry Participation:** Major companies such as **Alibaba, Tencent and Baidu**, along with startups like **DeepSeek** and **Moonshot AI**, are developing different types of AI models. Their combined efforts have created a diverse and competitive AI ecosystem.

4. **Efficient Use of Limited Resources:** Although China faces restrictions on advanced GPUs, it has compensated by using abundant electricity and a larger number of less advanced chips. This has enabled the development of powerful AI models despite hardware constraints.

5. **Focus on Practical AI:** Chinese firms have developed both large frontier models and lightweight models that can run on personal hardware. This makes AI more accessible for developers with different computing capacities.

6. **Protection of Domestic AI Industry:** The Chinese government has taken steps to prevent leading AI firms from becoming part of the U.S.-led AI ecosystem. It has also supported domestic companies in building independent technological capabilities.

7. **Global Developer Feedback:** Open-source AI models allow developers across the world to test, improve and adapt them for specialised applications. This has strengthened their quality and adoption.

China's AI Model vs U.S. AI Model

1. **Open Models vs Closed Models:** Many Chinese AI models are openly available, while leading U.S. companies such as **OpenAI, Anthropic and most of Google's AI models** mainly use proprietary systems. Open models allow wider participation by developers and businesses.

2. **Different Business Approaches:** U.S. companies largely earn revenue through subscriptions, licensing and paid AI services. Chinese companies have focused on expanding adoption by making many of their AI models openly available.

3. **Lower Deployment Cost:** Open-source models can be hosted by different infrastructure providers, increasing competition and improving cost predictability. This makes advanced AI more affordable for many users.

4. **Broad Developer Participation:** Developers can freely customise Chinese open models for specific needs. This has encouraged continuous testing, improvement and wider use by the global AI community.

5. **Different Innovation Priorities:** The United States continues to invest heavily in frontier AI to maintain technological leadership. China has focused on making advanced AI practical, affordable and widely deployable without sacrificing competitive performance.

Challenges and Emerging Concerns

1. **U.S. Chip Restrictions:** China still faces restrictions on accessing advanced GPUs needed for training and running AI models. These controls increase the cost and difficulty of building frontier AI systems.

2. **AI Distillation Allegations: OpenAI** and **Anthropic** have accused Chinese laboratories of using their models to train Chinese AI systems through **AI distillation**. China has rejected these allegations and described the U.S. response as technological bullying.

3. **Policy and Regulatory Response:** China's AI progress has prompted the United States to reconsider its earlier **laissez-faire** AI policy. Washington is exploring stricter measures, including possible sanctions and restrictions on Chinese AI models.

4. **High Cost of Open-Source AI:** Developing advanced open-source AI models requires significant computing power and financial resources. This makes it difficult to sustain frequent releases of high-quality open models.

5. **Sustainability of the Open-Source Model:** As development costs rise, companies may reduce the number of freely available models. **Alibaba** has already begun developing proprietary AI models that operate only on its own infrastructure.

6. **Trust and Geopolitical Concerns:** Chinese AI models continue to face a trust deficit in several countries, particularly **India**, because of broader geopolitical concerns. This affects their acceptance despite their growing technical capability.

7. **Strategic Competition in Frontier AI:** The United States continues to prioritise leadership in frontier AI because it considers the most advanced AI systems essential for future **military, economic and scientific** advantages.

Global Implications and India's Response

1. **Reshaping Global AI Competition:** China's progress has intensified competition with the United States and challenged the long-standing dominance of Western AI companies. The global AI race is now becoming much more balanced.

2. **Pressure on U.S. AI Companies:** Chinese AI models deliver comparable performance at a much lower cost. This could challenge the premium pricing strategy followed by several U.S. frontier AI companies once current subsidies decline.

3. **Growing Global Adoption:** Open-source Chinese models allow businesses and infrastructure providers to build customised AI services without depending on proprietary platforms. This is increasing their global reach and practical use.

4. **India's Balanced Approach:** India skipped the **Shanghai World AI Conference** despite hosting the **AI Impact Summit** earlier. At the same time, it continues to promote domestic AI firms such as **Sarvam AI** while not discouraging the use of open-source AI models.

5. **Investment and Market Competition:** Chinese AI firms such as **DeepSeek** and **Moonshot AI** are planning public listings, while major U.S. AI firms are also preparing IPOs. Investors are increasingly viewing China as a lower-cost alternative in the global AI market.

Conclusion

China's AI progress shows how **long-term planning, open-source innovation and efficient use of resources** can rapidly narrow the technology gap. While challenges such as trust, geopolitics and the future of open-source models remain, China has become a major AI competitor. The next phase of the AI race will be shaped by **innovation, commercial models and AI's expansion from the digital world to the physical world.**

Question for practice:

Examine how China's AI strategy has enabled it to rapidly emerge as a major challenger to the United States in the global artificial intelligence race.
Source: The Hindu

BitChat and its Blocking by India

UPSC Syllabus: Gs Paper 2- e-Governance And **Gs Paper 3**- Science and technology

Introduction
The **Union Ministry of Home Affairs** directed GitHub to remove repositories hosting **BitChat**, a decentralised Bluetooth-based messaging application developed by **Jack Dorsey**. The order cited concerns related to **public order, national security and law enforcement**. Critics argued that the government relied on **Section 79(3)(b)** instead of the prescribed blocking procedure under the IT Act. They also raised concerns over **constitutional safeguards, digital rights and transparency in government action.**

What is BitChat?

1. **Decentralised Messaging Platform:** BitChat is a **peer-to-peer messaging application** that works through **Bluetooth mesh networks**. It does not require the internet, central servers or phone numbers.

2. **Bluetooth Mesh Technology:** Every nearby device acts as both a client and a server. Messages move from one device to another through multiple hops, allowing communication over a wider area.

3. **No Central Infrastructure:** Unlike traditional messaging apps, BitChat does not depend on central servers that can be monitored, censored or shut down. It creates temporary communication networks among nearby devices.

4. **Privacy and Network Independence:** The platform is designed to provide **censorship resistance, surveillance resistance and infrastructure independence**. It continues to function during **internet shutdowns, protests, natural disasters and in areas with poor connectivity.**

5. **Anonymous Communication:** Users can communicate without mandatory registration, phone number verification or centralised logging of messages, making communication more private.

Government's Blocking Order

1. **Direction to GitHub:** On **23 July**, the **Indian Cyber Crime Coordination Centre (I4C)** directed GitHub to disable access to **three BitChat repositories**, including the Android application and release files, within **three hours**.

2. **Legal Consequences for Non-Compliance:** The notice warned that failure to comply could lead to the loss of **safe harbour protection** and even **criminal prosecution**.

3. **Concerns over Law Enforcement:** The government stated that BitChat's decentralised design makes **lawful interception, attribution and investigation** by law enforcement agencies very difficult.

4. **Risk During Public Order Situations:** The order argued that the application could help users **avoid lawful surveillance** and bypass restrictions during **internet shutdowns, riots, organised crime, terrorism and public order situations.**

5. **Possible Security Threats:** According to the order, decentralised communication platforms could be exploited for **unlawful assemblies, violent protests, misinformation, radicalisation, criminal conspiracies and activities affecting the sovereignty, integrity and security of India.**

Legal Framework Governing Online Content Blocking in India

1. **Notice Under Section 79(3)(b):** The notice was issued under **Section 79(3)(b) of the IT Act, 2000** read with **Rule 3(1)(d) of the IT Rules, 2021**. It directed GitHub to disable access to the repositories.

2. **Safe Harbour Protection:** Section 79 allows intermediaries to enjoy **safe harbour protection**. This protection may be lost if they fail to remove unlawful material after receiving a valid government notice.

3. **Duty to Preserve Evidence:** The notice required GitHub to remove access **without destroying evidence**, so that future investigation is not affected.

4. **Section 79 Is Not a Blocking Power:** The provision deals with intermediary liability but does not itself authorise blocking of online content.

5. **Blocking Under Section 69A:** Public access to online information is generally blocked under **Section 69A of the IT Act** and the **Blocking Rules, 2009**.

6. **Procedural Safeguards:** Section 69A requires a hearing, written reasons and review before issuing blocking directions.

7. **Grounds for Blocking:** The law permits blocking only on grounds such as **national security, public order and prevention of incitement to cognisable offences.**

Major Concerns

1. **No Unlawful Content Identified:** The **Internet Freedom Foundation (IFF)** argued that the repositories do not contain any identified unlawful content. The order is based only on the application's possible misuse.

2. **Technology Rather Than Content Targeted:** IFF stated that the order objects to BitChat's ability to work during **internet shutdowns**, instead of pointing to any illegal communication.

3. **Challenge to the Legal Basis:** IFF argued that using **Section 79(3)(b)** for blocking bypasses the safeguards available under **Section 69A**.

4. **Questionable Legal References:** IFF also questioned the notice for referring to **Section 43 of the IT Act** along with conspiracy and abetment provisions of the **Bharatiya Nyaya Sanhita, 2023** against a platform that only hosts code.

5. **Three-Hour Deadline:** The notice required compliance within **three hours**, giving very limited time for legal examination or judicial recourse.

6. **Proportionality Concern:** IFF argued that the order fails the proportionality standard laid down by the Supreme Court in **Anuradha Bhasin (2020)**.

7. **Effectiveness of the Takedown:** Removing GitHub repositories does not remove BitChat from devices where it is already installed. The decentralised mesh network can continue functioning without central servers.

8. **Transparency and Accountability:** Critics demanded publication of takedown orders, internet suspension orders and the legal basis for deploying signal jammers to improve public accountability.

Way Forward

1. **Need for Legal Clarity:** The dispute raises questions about whether **Section 79(3)(b)** can be used for blocking or whether such actions should always follow the procedure under **Section 69A.**

2. **Publication of Blocking Orders:** IFF demanded that all takedown orders and the reasons behind them should be made public to improve accountability and legal scrutiny.

3. **Ensure Proportionate Restrictions:** Restrictions on communication platforms should remain limited to what is necessary. They should satisfy the **proportionality principle** laid down by the Supreme Court in **Anuradha Bhasin (2020).**

4. **Improve Transparency:** Blocking directions, internet suspension orders and the recorded reasons should be made public to strengthen accountability and allow legal scrutiny.

5. **Balance Security and Rights:** Regulation of decentralised communication platforms should protect **national security and public order** while respecting **constitutional safeguards and lawful communication.**

Conclusion

The **BitChat** controversy highlights the challenge of balancing **national security, public order and constitutional freedoms**. It also raises questions about the legal procedure followed for online blocking. The issue underlines the need for **transparent government action and proportionate restrictions**. At the same time, it emphasises protecting **effective law enforcement and fundamental rights** within the existing legal framework.

Question for practice:

Discuss the features of BitChat and examine the legal and constitutional issues arising from the Government of India's decision to block its repositories.

Source: The Hindu

India's policy on urea

Source: The post "**India's Policy on Urea Production**" has been created based on "**India's policy on urea**" published in "The Hindu" on 28th July 2026.

UPSC Syllabus: GS 3 – Agriculture

Context: The Union Cabinet has approved the **National Investment Policy for Urea (NIPU), 2026)** to promote self-reliance in urea production amid concerns over fertilizer shortages, import dependence, and rising demand.

Evolution of India's Urea Production Policy

1. The Government introduced the **National Investment Policy (NIP)** for the urea sector in **2012**, followed by modifications in **2013** and **October 2014** to encourage fresh investments.
2. Under the **2012 policy**, **six new urea plants** were established, including **four through Joint Venture Companies (JVCs) of nominated Public Sector Undertakings (PSUs)** and **two by private companies**.
3. India currently has **33 operational urea manufacturing units** with a total reassessed/installed capacity of **269.42 Lakh Metric Tonnes (LMT)**.
4. The Government amended the policy again in **May 2015** for **25 existing gas-based urea units** to increase domestic production.
5. The 2015 amendment resulted in an **additional annual production of 20–25 LMT of urea**.
6. India's urea production increased from **225 LMT in 2014–15** to **314.07 LMT in 2023–24**.
7. During **2025–26**, the country produced **293.30 LMT of urea**.
8. Despite higher domestic production, **India continues to import urea to bridge the gap between domestic demand and production**.

Key Features of the National Investment Policy for Urea (NIPU), 2026

1. The policy aims to **promote self-reliance in urea production** by encouraging investments in **new gas-based urea manufacturing units**.
2. The policy **separates fixed and variable costs** to improve transparency in determining production costs.
3. The policy introduces a **Return on Equity (RoE) band** with a **minimum of 12% and a maximum of 16%** to ensure financial viability for investors.
4. The policy reduces **foreign exchange risk** by converting the **fixed cost component into Indian Rupees after four years** based on prevailing exchange rates.

India's Fertilizer Subsidy

1. The total fertilizer subsidy increased from **₹1,77,162.06 crore in 2024–25** to **₹2,17,281.10 crore in 2025–26**.
2. The **urea subsidy** increased from **₹1,24,319.50 crore in 2024–25** to **₹1,42,175.74 crore in 2025–26**.
3. The subsidy for **phosphorus and potassium fertilizers** stood at **₹74,999.99 crore in 2025–26**, compared to **₹52,810 crore in 2024–25**.
4. The Government also provided **₹105.37 crore in 2025–26** and **₹32.56 crore in 2024–25** for promoting **organic fertilizers**.

Availability of Urea

1. The country's **kharif 2026 urea requirement** is estimated at **370.84 LMT**, while the **available quantity is 432.44 LMT**.
2. Out of the available quantity, **381.59 LMT will be sold through the Direct Benefit Transfer (DBT) system**.
3. Under the DBT system, **subsidized fertilizers are sold through Point of Sale (PoS) devices**, and beneficiaries are identified using **Aadhaar Card, Kisan Credit Card (KCC), Voter Identity Card, or other approved identity documents**.
4. During **2024–25**, the country's urea requirement was **364.01 LMT**, while availability stood at **443.83 LMT**.

Challenges in India's Urea Sector

1. **India continues to depend on urea imports** because domestic production remains insufficient to meet the growing demand.
2. **The fertilizer subsidy burden is increasing**, with the total fertilizer subsidy rising to **₹2,17,281.10 crore in 2025–26**, placing significant pressure on the government's finances.
3. **Overuse of urea and other chemical fertilizers** has led to concerns about nutrient imbalance, declining soil health, and environmental sustainability.
4. **Global geopolitical developments**, such as the **West Asia situation**, can disrupt fertilizer supply chains and create concerns about fertilizer availability during the agricultural season.
5. **Climate variability**, including **El Niño-induced higher demand**, increases pressure on fertilizer availability and distribution.
6. **Dependence on gas-based urea production** exposes the sector to fluctuations in natural gas prices and foreign exchange risks, although NIPU 2026 seeks to mitigate part of this risk.
7. **The adoption of Nano Urea remains limited** because of concerns regarding its scientific efficacy and field performance.
8. **Ensuring balanced fertilizer use remains a challenge**, despite government efforts to promote **Integrated Nutrient Management (INM)** and organic fertilizers.
9. **Efficient implementation of due investment and timely establishment of new gas-based urea plants** will be essential for achieving the objective of self-reliance in urea production.

Measures to Promote Balanced Fertilizer Use

1. The Government promotes **Integrated Nutrient Management (INM)** to ensure balanced and efficient use of fertilizers.
2. INM encourages the **scientific integration of organic sources, chemical fertilizers, and biological inputs** for sustainable nutrient management.
3. The objective of INM is to **meet crop nutrient requirements economically while maintaining long-term soil fertility**.
4. The Government has also promoted **Nano Urea**, although its adoption remains limited because of concerns regarding its scientific efficacy and field performance.

Conclusion: The **National Investment Policy for Urea, 2026** seeks to enhance domestic urea production, reduce import dependence, improve transparency in the sector, and strengthen India's fertilizer security while promoting sustainable nutrient management practices.

Question: Discuss the evolution of India's urea production policy. What are the key features of the National Investment Policy for Urea (NIPU), 2026?

Source: The Hindu

US Generic Drug Tariff Threat: Implications for Indian Pharma

Source: The post "**US Generic Drug Tariff Threat: Implications for Indian Pharma"** has been created based on "**US Generic Drug Tariff Threat: Implications for Indian Pharma"** published in "Indian Express" on 28th July 2026.

UPSC Syllabus: GS 3 – Economy

Context: U.S.A President Donald Trump has proposed imposing **100% tariffs on generic drugs after two years and 200% thereafter** to encourage pharmaceutical manufacturing in the U.S.A. Although such tariff proposals have largely remained unimplemented so far, they have created uncertainty for Indian pharmaceutical exporters, as the **U.S.A is India's largest pharmaceutical export market**.

Importance of the Proposed Tariff for India's Pharmaceutical Sector

1. **U.S.A accounts for nearly 40% of India's pharmaceutical exports**, making it the country's largest export destination for medicines.
2. Around **90% of India's pharmaceutical exports to the U.S.A consist of generic medicines**, making Indian companies particularly vulnerable to any tariff on generics.
3. In **2025, India exported pharmaceutical products worth $9.7 billion** to the U.S.A.
4. The **U.S.A imported pharmaceutical products worth $213 billion in 2025**, including **$94.1 billion worth of finished medicines**, which includes generic drugs.
5. Any tariff on generic medicines could affect the competitiveness of Indian pharmaceutical companies in their largest overseas market.

Reasons behind Trump's tariff proposal

1. The proposed tariffs are intended to **encourage pharmaceutical companies to establish manufacturing facilities in the U.S.A**.
2. Trump has stated that companies that do not manufacture in the U.S.A would face financial penalties through higher tariffs.
3. Similar tariff threats have previously been issued to attract investment into the U.S.A rather than being immediately implemented.
4. So far, **pharmaceutical products have largely remained exempt** from tariff measures introduced under various U.S.A trade laws.

Impact on Indian Pharmaceutical Companies

1. Tariff uncertainty is encouraging **greater outbound investment by Indian pharmaceutical companies in the U.S.A**.
2. **Sun Pharmaceutical Industries** announced the acquisition of **Organon & Co.** for **$11.8 billion**, making it the largest overseas acquisition by an Indian pharmaceutical company.
3. According to a **Grant Thornton** report, **April 2026 recorded 103 mergers and acquisitions worth $18.7 billion**, the highest monthly deal value since May 2022, driven largely by outbound transactions.

4. India's outbound pharmaceutical investment to the U.S.A increased to **$4.08 billion in FY26**, compared with **$3.44 billion in FY25** and **$2.44 billion in FY24**.
5. Several Indian pharmaceutical companies already operate **FDA-approved manufacturing facilities in the U.S.A**, including Sun Pharma, Zydus Lifesciences, Lupin, Aurobindo Pharma, Cipla and Dr. Reddy's Laboratories.
6. **Cipla** is expanding manufacturing capacity in **Massachusetts and New York**.
7. **Dr. Reddy's Laboratories** has indicated its willingness to expand U.S.A manufacturing if commercially viable.

Challenges in Relocating Generic Drug Manufacturing

1. **Generic medicines operate on extremely thin profit margins**, making large-scale relocation of production financially difficult.
2. Generic drug manufacturing depends on **global supply chains**, particularly for **Active Pharmaceutical Ingredients (APIs)**.
3. A significant share of APIs continues to be sourced from **India and China**.
4. Building an entirely domestic U.S.A pharmaceutical supply chain would require **substantial investment**.
5. Increased domestic manufacturing in the U.S.A is likely to **raise medicine prices** for consumers.

Challenges for India

1. Continued tariff uncertainty may encourage **greater relocation of investment and manufacturing** from India to the U.S.A.
2. Higher tariffs, if implemented, could reduce the **price competitiveness of Indian generic medicines** in the U.S.A market.
3. Indian pharmaceutical companies may face **higher compliance and investment costs** to establish manufacturing facilities in the U.S.A.
4. Greater overseas investment could potentially reduce future manufacturing expansion within India.

Way Forward

1. **Indian pharmaceutical companies should diversify their export markets** to reduce excessive dependence on the U.S.A, which currently accounts for nearly 40% of India's pharmaceutical exports.
2. **The Government should strengthen domestic pharmaceutical manufacturing**, particularly the production of Active Pharmaceutical Ingredients (APIs), to reduce supply chain vulnerabilities and improve global competitiveness.
3. **Indian companies should adopt a balanced investment strategy** by expanding manufacturing in the U.S.A where commercially viable while continuing to strengthen their manufacturing base in India.
4. **India should continue engaging with the U.S.A through bilateral trade dialogue** to ensure stable market access for affordable generic medicines and avoid disruptive tariff measures.
5. **The pharmaceutical industry should focus on improving innovation, operational efficiency, and cost competitiveness** to remain resilient against changing global trade policies and maintain its leadership in generic drug exports.

Conclusion: Although the proposed tariffs have not yet been implemented, they signal a policy push toward reshoring pharmaceutical manufacturing in the U.S.A India's pharmaceutical industry must balance continued

access to its largest export market with diversification of markets, strengthening domestic manufacturing, and strategic overseas investments to remain globally competitive.

Question: Examine the implications of the proposed U.S.A tariff on generic drugs for India's pharmaceutical sector.

Source: Indian Express

AI's Next Test — Reaching India's Informal Women Worker

UPSC Syllabus: Gs Paper 2- science and technology And Paper 1- society

Introduction

India's journey towards **Viksit Bharat 2047** depends on whether the benefits of **Artificial Intelligence (AI)** reach everyone or remain limited to a few. AI is changing agriculture, healthcare, logistics and financial services. Its impact will depend on how these systems are designed, whose data they use, and whether they meet the needs of women working in the informal economy. Inclusive AI can strengthen growth, while exclusion can deepen existing inequalities.

AI and India's Informal Women Workers

1. **Informal employment dominates women's work:** According to the **ILO (2018)**, around **82% of working women in India** are employed in the informal sector. They work in agriculture, home-based production, domestic services and micro-enterprises.

2. **Women form a major agricultural workforce:** The **PLFS 2023–24** reports that **76.9% of rural women** are engaged in agriculture. This makes them one of the largest groups that can be affected by AI-based agricultural technologies.

3. **AI inclusion is an economic issue:** The impact of AI on women is mainly about **economic inclusion**. Whether women can access AI tools and opportunities will determine if AI reduces or widens existing inequalities.

4. **Design of AI will decide inclusiveness:** The benefits of AI depend on **who the systems are built for, whose data they use and which languages they support**. These choices will determine whether AI promotes inclusive growth or strengthens structural inequalities.

5. **Gender-responsive AI is essential: UN Women** has warned that AI can reinforce stereotypes, discrimination and digital violence if gender concerns are ignored in its design, testing and oversight.

Opportunities Created by AI

1. **Improving agricultural productivity:** AI can support farmers through precision agriculture, real-time crop health advice, better input use and improved market access. These services can help women farmers improve their productivity and income.

2. **Evidence of positive impact:** A **2024 Farmer.Chat study** conducted across **12 States** found that **61% of women users** reported an improved quality of life within **45 days**. Their engagement with the platform was **two to three times higher** than that of men.

3. **Importance of inclusive design:** Better outcomes were seen when AI tools considered women's language needs, land access patterns, mobility limits and livelihood requirements. This shows that technology becomes more useful when it is designed around users' realities.

4. **Opportunity beyond agriculture:** AI has the potential to support women involved in home-based work, self-help groups and other informal activities by improving access to information and economic opportunities.

5. **Expanding access to AI:** India's growing AI ecosystem creates an opportunity to extend digital tools to women who have traditionally remained outside formal technological systems.

Challenges and Risks

1. **Unequal access to AI benefits:** AI may increase inequality if its benefits remain concentrated among people who already enjoy better digital access and resources instead of reaching informal women workers.

2. **Bias in AI systems:** AI systems may produce unfair outcomes when they are trained on limited data or ignore women's realities. This can reinforce existing gender bias rather than reducing it.

3. **Risk of job displacement:** According to the **ILO**, women are **three times more likely** than men to lose their jobs because of AI-driven automation. This makes gender equality an important concern in AI adoption.

4. **Clerical jobs face the highest exposure:** Women are heavily represented in clerical and administrative work such as typing, bookkeeping and data entry. These repetitive and rule-based jobs are among the most vulnerable to generative AI.

5. **AI is reaching skilled occupations:** AI is also affecting software, finance and media jobs because these sectors depend heavily on digital work. This shows that automation is expanding beyond routine tasks.

6. **Technology-facilitated violence reduces participation:** Deepfakes, online harassment and non-consensual images discourage women from participating in digital spaces. Fear of such abuse can limit their economic opportunities.

7. **Digital access alone is not enough:** Simply providing AI tools cannot ensure inclusion. Without suitable skills, language support and safe digital environments, many women may still remain excluded.

8. **Need for timely policy action:** The growing impact of AI on women's employment highlights the need for governments, employers and labour organisations to prepare workers for technological change while protecting inclusion and equity.

Policy and Governance Priorities

1. **India AI Governance Guidelines (2025):** The **India AI Governance Guidelines (2025)** introduced **seven guiding principles**, including **fairness and equity**, to promote responsible and inclusive AI governance.

2. **IndiaAI Mission:** The **IndiaAI Mission** supports AI development, deployment and capacity building to expand AI adoption across different sectors.

3. **BHASHINI (BHASHa Interface for India):** The **BHASHINI** platform promotes multilingual access to AI and digital services, making AI more accessible to people speaking different Indian languages.

4. **Information Technology (Amendment) Rules, 2021:** The **Information Technology (Amendment) Rules, 2021** require grievance redressal mechanisms for harmful online content to improve protection against digital abuse.

5. **MeitY's proposed labelling of AI-generated synthetic content: MeitY's** proposed mandatory labelling of AI-generated synthetic content aims to improve transparency and reduce the misuse of AI-generated content.

6. **National Commission for Women's review of cyber laws:** The **National Commission for Women's** review of cyber laws provides recommendations to strengthen legal protection against technology-facilitated gender-based violence.

7. **Growing AI ecosystem:** The **India AI Impact Summit 2026** showed that India's AI ambitions are supported by a growing ecosystem of practitioners, innovators and civil society.

Way Forward

1. **Gender-responsive AI design:** AI systems should be designed, tested and monitored by considering women's language, mobility, land access and livelihood needs so that technology expands opportunities instead of reinforcing inequalities.

2. **AI literacy through existing government programmes:** AI literacy should be integrated into **Deen Dayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM), Deen Dayal Upadhyaya Grameen Kaushalya Yojana (DDU-GKY), Skill India and Mission Shakti's Sakhi network**. Training should match women's time constraints, literacy levels and livelihood needs.

3. **Inclusive AI deployment:** AI benefits should reach **women farmers, home-based workers, self-help group members and platform workers** through inclusive design, procurement standards and outcome-based implementation.

4. **Strengthen digital safety:** Legal safeguards and grievance redressal mechanisms should be effectively implemented in regional languages to protect women from deepfakes, online harassment and other forms of technology-facilitated violence.

5. **Prepare workers for AI-driven changes:** Governments, employers and labour organisations should work together to reduce job displacement risks and ensure that AI improves job quality, productivity and inclusion without widening gender inequalities.

Conclusion

India's AI success should be measured not only by technological progress but also by its ability to create **meaningful economic opportunities for women in informal work**. Gender-responsive governance, inclusive AI design, digital safety and skill development can ensure that AI supports **Viksit Bharat 2047** by making its productivity gains accessible to those who have traditionally remained excluded.

Question for practice:

Examine the role of Artificial Intelligence (AI) in promoting economic inclusion of India's informal women workers and discuss the policy measures needed to ensure gender-responsive AI governance.
Source: The Hindu

India's Road to Cleaner Mobility – Beyond CAFE Norms

UPSC Syllabus: Gs Paper 3- Infrastructure And Environment
Introduction

India is revising its Corporate Average Fuel Efficiency (CAFE) framework at a time when the global automobile industry is shifting from internal combustion engine (ICE) vehicles to cleaner mobility technologies. The proposed CAFE 2027 regulations seek to improve fuel efficiency through multiple technology pathways while reducing dependence on imported crude oil. The central debate is whether the new framework will simply ease regulatory compliance or drive a faster transition towards clean mobility, energy security and lower transport-sector emissions.

Evolution of Fuel Economy Regulations

1. **Purpose of CAFE Standards:** CAFE standards regulate the **sales-weighted average fuel consumption** of a manufacturer's passenger vehicle fleet instead of individual vehicle models. This encourages improvements across the entire fleet rather than a few efficient vehicles.

2. **Beginning of Fuel-Efficiency Rules:** The **United States introduced CAFE standards in 1975** after the **1973 Arab oil embargo** to reduce oil dependence and protect consumers from rising fuel costs. The regulations encouraged manufacturers to produce smaller and more fuel-efficient vehicles.

3. **Expansion to Climate Objectives:** From the **1990s**, fuel-efficiency regulations also became a tool to reduce **greenhouse-gas emissions**. Technology-neutral rules encouraged innovation in **hybrid vehicles and electric vehicles (EVs)** along with better engine efficiency.

4. **China's Regulatory Shift:** China introduced mandatory fuel-consumption standards in **2004**, initially regulating individual vehicle models based on weight. As oil imports and urban pollution increased, the standards became progressively stricter.

5. **Dual Credit System:** China adopted the **Dual Credit System** in **2018**, requiring manufacturers to meet both **Corporate Average Fuel Consumption (CAFC)** standards and **New Energy Vehicle (NEV)** credit requirements. Meeting fuel-efficiency targets alone is insufficient because manufacturers must also generate adequate NEV credits through EVs or plug-in hybrids.

6. **Credit-Based Incentive for Electrification:** Manufacturers that fail to generate enough **NEV credits** must purchase them from companies with surplus EV production. This creates a market that rewards faster electrification and discourages delays in adopting cleaner vehicles.

7. **Global Progress in EV Adoption:** According to the **International Energy Agency's Global EV Outlook 2026**, China sold **more than 13 million electric cars in 2025**, representing **almost 55%** of new passenger vehicle sales. Comparable figures were **about 27% in the European Union**, **nearly 10% in the United States** and **around 4% in India**, showing India's relatively slower transition.

India's Proposed CAFE 2027 Framework

1. **New Regulatory Direction:** The **Ministry of Power** has proposed **CAFE 2027** for **M1 passenger vehicles** from **1 April 2027**. The framework redesigns fuel-efficiency regulation to reflect the growing use of cleaner vehicle technologies and alternative fuels.

2. **Technology-Neutral Framework:** The proposal moves away from treating conventional **ICE vehicles** as the regulatory benchmark. Manufacturers can improve compliance through **EVs, hybrids, flex-fuel vehicles, CNG and other approved low-carbon technologies**.

3. **Fleet-Average Compliance:** Every manufacturer must meet the prescribed **sales-weighted average fuel-consumption target** for its eligible passenger vehicle fleet. The framework continues to regulate the fleet as a whole instead of individual models.

4. **Progressively Stricter Targets:** The draft proposes tighter fuel-consumption limits from **FY2027–28 to FY2031–32**. It also aims to reduce average emissions from **around 113 gCO_2/km to 77 gCO_2/km by FY2031–32**.

5. **Multiple Technology Pathways:** Compliance is no longer based only on improving conventional engine efficiency. **Carbon Neutrality Factors (CNFs), approved efficiency technologies and super credits** allow different clean technologies to contribute towards fleet targets.

6. **Common Fuel-Consumption Method:** Different vehicle technologies are assessed using a **common petrol-equivalent fuel-consumption methodology**. This creates a common basis for comparing multiple clean mobility options.

7. **Market-Based Compliance:** Manufacturers performing better than their targets can generate **tradable compliance credits**. Companies with compliance deficits can use **credit trading, pooling arrangements or the Bureau of Energy Efficiency (BEE) buyout mechanism** to meet their obligations.

8. **Improved Monitoring and Testing:** The proposal introduces **manufacturer compliance passbooks** and requires reporting under both the **Modified Indian Driving Cycle (MIDC)** and the **Worldwide Harmonised Light Vehicles Test Procedure (WLTP)**. Manufacturers selling **fewer than 1,000 passenger vehicles annually** remain exempt from fleet-average compliance requirements.

Arguments Supporting the Draft

1. **Technology-Neutral Choice:** Instead of favouring one technology, the draft allows manufacturers to choose the most suitable clean mobility pathway.
2. **Multiple Compliance Pathways: Carbon Neutrality Factors (CNFs), technology credits and super credits**encourage manufacturers to adopt different clean mobility solutions according to their product portfolio.
3. **Greater Compliance Flexibility:** Credit trading, pooling arrangements and the BEE buyout mechanism reduce compliance costs while allowing manufacturers additional flexibility.
4. **Regulatory Modernisation:** The proposal introduces **manufacturer compliance passbooks** and gradual adoption of **WLTP** alongside **MIDC**, bringing India's testing framework closer to international practices.

Concerns and Criticisms

1. **Reduced Effective Stringency:** The combined effect of **CNFs, super credits, credit banking, BEE buyouts and multi-year compliance periods** substantially weakens the actual strength of the regulations.
2. **Uncertain Ethanol Incentives:** Manufacturers receive compliance benefits for higher ethanol-compatible vehicles even though the government has **not decided to move beyond E20 blending**. Ethanol is also costlier and provides lower mileage than petrol.
3. **Compliance Without Technological Change:** Companies can purchase compliance credits instead of upgrading their own technologies, reducing the incentive for cleaner vehicle development.
4. **Weak Push for Electrification: Strong hybrids** receive super-credit benefits despite relying mainly on **ICE technology**, while fewer low-emission vehicle sales are required because of the super-credit system.
5. **Lower Ambition Than Industry Plans:** Manufacturers have already announced **average EV targets of nearly 20% by 2030**, with several aiming for **30% or more**. The proposed framework therefore attempts only part of the industry's own transition plans.

Why Stronger Fuel-Efficiency Regulations Matter

1. **Regulation Should Shape Markets:** Fuel-efficiency regulations should create demand for cleaner technologies rather than simply accommodate existing market preferences. India's experience with **compressed natural gas (CNG)** shows that clear policy support and regulatory certainty encouraged manufacturers to rapidly introduce CNG vehicles..

2. **Energy Security:** India remains heavily dependent on imported crude oil, making the economy vulnerable to **geopolitical tensions**. Better fuel-efficiency standards can reduce long-term dependence on imported fuel.

3. **Macroeconomic Stability:** Lower crude oil dependence can reduce the impact of **imported inflation and currency pressures** arising from external energy shocks. Fuel-efficiency policy therefore has wider economic importance.

4. **Beyond Environmental Goals:** Stronger fuel-efficiency standards are not only an environmental objective. They also support **energy security, industrial policy and macroeconomic stability** while helping India meet its **Glasgow commitment on energy efficiency**.

5. **Global Competitiveness:** Revising CAFE norms provides India with an opportunity to move closer to the world's leading automobile markets in the transition towards **low-carbon mobility**.

Conclusion

The proposed CAFE 2027 framework broadens India's fuel-efficiency regulation through technology neutrality, multiple clean mobility pathways and market-based compliance mechanisms. However, excessive flexibility may weaken its intended impact. India should ensure that fuel-efficiency regulations encourage genuine technological transformation while strengthening energy security, industrial competitiveness, lower transport-sector emissions and progress towards low-carbon mobility.

Question for practice:

Discuss the key features and significance of the proposed CAFE 2027 framework for India's transition to cleaner mobility.

Source: The Hindu

India–Australia Relations: A New Chapter

Source: The post "India–Australia Relations: A New Chapter" has been created based on "India–Australia Relations: A New Chapter" published in "Indian Express" on 29th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: India–Australia relations have entered a new phase characterised by concrete outcomes in trade, investment, energy, education, sports, culture, and people-to-people exchanges. Prime Minister Narendra Modi's recent visit to Australia demonstrated that the bilateral partnership is now increasingly defined by implementation and delivery rather than only future potential.

India–Australia partnership: From potential to delivery

1. Investment and Infrastructure

a. AustralianSuper, Australia's largest superannuation fund, has announced an investment of **A$500 million** in the Mumbai-based National Investment and Infrastructure Fund (NIIF).
b. With this investment, AustralianSuper's total investments in India have increased to **A$3.3 billion**.
c. This investment reflects Australia's confidence in India's economic growth and infrastructure transformation, especially in western India.

2. Trade and Economic Cooperation

a. Bilateral trade between India and Australia has crossed **A$50 billion**, demonstrating the growing economic partnership.
b. The **Australia–India Economic Cooperation and Trade Agreement (ECTA)** has significantly strengthened bilateral trade.
c. Since January, all Indian goods exported to Australia have become tariff-free, improving the competitiveness of Indian exporters.
d. Indian service exports to Australia have increased by **58%** since the implementation of ECTA.

3. Energy Security and Clean Energy

a. Both Prime Ministers issued a **Joint Statement on Energy Security** to strengthen cooperation in reliable energy supplies.
b. Australia has agreed to export uranium to India exclusively for peaceful purposes under **International Atomic Energy Agency (IAEA)** safeguards.
c. Australia possesses nearly one-third of the world's known uranium reserves and is also a major supplier of critical minerals required for the clean energy transition.
d. This cooperation strengthens India's long-term energy security and supports its clean energy goals.

4. Education and Innovation

a. Eight Australian universities have committed to establishing campuses in India.
b. The **University of Western Australia** will establish its first Indian campus in Mumbai.
c. **Deakin University** and the **University of Wollongong** have already established campuses in Gujarat's GIFT City.
d. These initiatives will promote research collaboration, skill development, innovation, and greater academic exchanges.

5. Sports Cooperation

a. India and Australia have adopted a **Sports Collaboration Roadmap** to strengthen cooperation in sports science, capability development, and major sporting event management.
b. Australia can support India's preparations for hosting international sporting events, including the proposed **2036 Olympic Games**.
c. The **G'Day-Namaste** programme and the Australia–India Sports Summit in Mumbai will further strengthen sports diplomacy.

6. Cultural Cooperation

a. Prime Minister Narendra Modi acknowledged the contribution of the **Indian Film Festival of Melbourne** in promoting Indian cinema globally.
b. The announcement of **Silkyara 41**, a joint film project involving Australian and Indian partners, reflects growing collaboration under the India–Australia Co-Production Agreement.
c. These initiatives strengthen cultural diplomacy and deepen mutual understanding.

7. People-to-People Relations

a. More than **one million Australians** are of Indian heritage, making the Indian diaspora an important bridge between the two countries.
b. More than **140,000 Indian students** studied in Australia in 2025.
c. More than **one million visits** were made between the two countries during the year.
d. ECTA has also created greater opportunities for skilled professionals to work and contribute in both countries.

8. Strategic Significance

a. India and Australia have emerged as trusted strategic partners in the Indo-Pacific region.
b. Their complementary economies and shared democratic values provide a strong foundation for long-term cooperation.
c. Western India is expected to become a major centre for investments, education, innovation, clean energy, and sports cooperation under this growing partnership.

Challenges

1. The bilateral partnership still depends heavily on the effective implementation of announced agreements and projects.
2. Trade and investment can be affected by global economic uncertainties and supply chain disruptions.
3. Differences in regulatory frameworks and investment procedures may slow the execution of projects.
4. Expanding educational and research collaborations will require sustained institutional coordination.
5. Ensuring uninterrupted cooperation in critical minerals and clean energy will require long-term policy stability and mutual trust.

Way Forward

1. **Both countries should ensure the effective implementation of commitments made under the Australia–India Economic Cooperation and Trade Agreement (ECTA)** to further expand bilateral trade and investment.
2. **India and Australia should deepen cooperation in infrastructure, clean energy, critical minerals, and energy security** to support sustainable economic growth and the global energy transition.
3. **They should strengthen collaboration in education, research, innovation, and skill development** by facilitating the establishment of Australian university campuses and promoting joint research programmes.
4. **Both countries should enhance strategic cooperation in the Indo-Pacific** through greater coordination on regional security, resilient supply chains, and maritime cooperation.
5. **People-to-people ties should be further strengthened** by promoting student mobility, tourism, cultural exchanges, sports cooperation, and opportunities for skilled professionals.
6. **Greater private-sector participation should be encouraged** to increase investments in infrastructure, technology, manufacturing, and emerging sectors such as critical minerals and clean energy.
7. **Regular high-level political dialogue and institutional mechanisms should be strengthened** to ensure timely implementation of agreements and address emerging challenges.
8. **Western India should be leveraged as a key hub for bilateral cooperation**, particularly in infrastructure, education, innovation, and clean energy projects, to maximise the benefits of the growing partnership.

Conclusion: India–Australia relations have evolved into a mature and action-oriented partnership that delivers tangible outcomes across multiple sectors. By addressing implementation challenges and expanding cooperation in emerging areas, both countries can further strengthen their strategic partnership and contribute to sustainable economic growth and stability in the Indo-Pacific region.

Question: "India–Australia relations have moved from being a partnership of potential to a partnership of delivery." Discuss in the light of recent developments. Also examine the challenges and suggest the way forward.

Source: Indian Express

AI Inclusion for Informal Women Workers

Source: The post “AI Inclusion for Informal Women Workers” has been created based on "AI Inclusion for Informal Women Workers” published in “The Hindu” on 29th July 2026.

UPSC Syllabus: GS 2 – International Relations

Context: Artificial Intelligence (AI) is transforming sectors such as agriculture, healthcare, logistics, and financial services. However, India's journey towards **Viksit Bharat 2047** depends on whether the productivity gains from AI are shared equitably, particularly among informal women workers, who constitute the majority of India's female workforce.

Why AI must empower informal women workers

1. Women form the backbone of the informal economy.

- According to the **ILO (2018)**, around **82% of working women in India are employed in the informal sector**, including agriculture, domestic work, home-based production, and micro-enterprises.
- Therefore, AI-led economic growth will be inclusive only if it reaches this large workforce.

2. AI can improve agricultural productivity and livelihoods.

- AI-enabled precision agriculture can provide real-time crop advisory, crop health monitoring, input optimisation, and better market access.
- According to **PLFS 2023–24**, **76.9% of rural women are engaged in agriculture**, making them a key beneficiary of AI-based agricultural solutions.

3. Evidence shows that women benefit significantly from AI tools.

- A **2024 Farmer.Chat study** across 12 States found that **61% of women users reported an improved quality of life within 45 days**.
- The study also found that women's engagement with the platform was **two to three times higher than that of men** when AI tools were designed according to their language, mobility, and livelihood needs.

4. Gender-responsive AI promotes inclusive economic growth.

- India's **AI Governance Guidelines (2025)** recognise principles such as fairness and equity.
- Gender-responsive AI can improve women's access to employment, welfare schemes, financial services, and digital opportunities.

5. AI can strengthen financial and digital inclusion.

- AI can help women access government entitlements, digital platforms, financial services, and better livelihood opportunities.
- This can increase productivity and economic participation among informal women workers.

Challenges

1. AI systems may reinforce existing gender inequalities if they are not designed with a gender-responsive approach.
2. AI models often suffer from biased data, limited representation of women, and inadequate support for regional languages.
3. Women in the informal sector face low digital literacy, limited access to smartphones, and poor digital infrastructure.
4. The absence of gender impact assessments may result in AI systems producing discriminatory outcomes in areas such as credit, employment, and welfare delivery.
5. Technology-facilitated gender-based violence, including deepfakes, online harassment, and non-consensual imagery, discourages women from participating in digital platforms.
6. Weak grievance redressal mechanisms and the lack of accessible remedies in regional languages reduce trust in AI-enabled services.

Way Forward

1. Gender impact assessments should be made an integral part of AI systems that affect employment, welfare delivery, financial inclusion, and women's safety.
2. AI investments should adopt Gender Responsive Budgeting by assessing which women will benefit, which barriers are being addressed, how outcomes will be measured, and how corrective action will be financed.
3. AI literacy should be treated as public infrastructure and integrated with schemes such as DAY-NRLM, DDU-GKY, Skill India, and Mission Shakti through the Sakhi network.
4. AI tools should be designed in regional languages and should address women's mobility, literacy, land ownership, and livelihood constraints.
5. Strong implementation of the IT (Amendment) Rules, 2021 and mandatory labelling of AI-generated synthetic content should be ensured to protect women from online harms.
6. Accessible grievance redressal mechanisms and survivor-centric remedies should be made available in regional languages to enhance trust in AI systems.
7. AI policies should promote inclusive design, ethical governance, and continuous monitoring to ensure that productivity gains reach women farmers, home-based workers, self-help group members, and platform workers.

Conclusion: Artificial Intelligence has the potential to become a powerful driver of inclusive growth in India. However, its success should not be measured only by technological advancement but by whether it expands opportunities, enhances productivity, and improves the livelihoods of informal women workers. A gender-responsive AI ecosystem will be essential for achieving the vision of **Viksit Bharat 2047**.

Question: "Artificial Intelligence (AI) can become a powerful tool for inclusive development only if it empowers India's informal women workers." Discuss. Also examine the challenges and suggest a way forward.

Source: The Hindu

The Urban Nightmare — A Fire with No Escape

UPSC Syllabus: Gs Paper 3- Disaster Management

Introduction

The fire in an unauthorised commercial building at Aliganj, Lucknow, which claimed **15 lives on June 22, 2026**, exposed a deeper crisis in India's urban governance and disaster risk management. Similar incidents in Delhi, Rajasthan and Tamil Nadu show that these tragedies are not isolated events but the result of weak enforcement, political interference, corruption and poor urban planning. As India's cities expand rapidly, strengthening urban resilience and risk reduction has become essential for protecting lives and ensuring sustainable urban development.

Root Causes of India's Urban Governance Crisis

1. **Illegal construction and unsafe land use:** Commercial establishments continue to operate from residential areas and unauthorised buildings without proper fire exits or safety measures. Such violations convert ordinary buildings into death traps during emergencies.

2. **Failure to enforce existing laws:** Fire safety laws, building regulations and licensing requirements already exist, but repeated violations continue because authorities fail to implement them effectively. People die despite the presence of laws, not because of their absence.

3. **Political patronage and corruption:** Political interference, vote-bank considerations and corruption allow illegal constructions to survive for years. Officials often overlook violations because of political pressure or personal gains, weakening the entire enforcement system.

4. **Violations continue without consequences:** Unsafe buildings remain functional even after repeated notices and known violations. When offenders rarely face strict action, illegal practices become normal across many cities.

5. **Growing human and economic cost:** India records around 13,000–15,000 fire deaths every year, while 39 people died in fires in Delhi during the first quarter of 2026 itself. Rising heatwaves are also increasing electrical fire risks, making urban safety an even bigger concern.

6. **Urban growth is increasing risk exposure:** India's cities are concentrating more people, infrastructure and economic activity in limited spaces. Rapid urbanisation, informal settlements and increasing vulnerabilities make the impact of disasters much more severe.

Governance Deficit and Institutional Challenges

1. **Weak Urban Local Bodies:** More than three decades after the 74th Constitutional Amendment, most Urban Local Bodies continue to have limited authority. Municipal corporations carry responsibilities but lack adequate powers to enforce effective urban governance.

2. **Fragmented institutional responsibilities:** Urban functions are divided among development authorities, municipal corporations, public works departments, water boards and other agencies. This fragmented system creates confusion over responsibility and weakens accountability.

3. **Lack of accountability after disasters:** Major accidents usually lead to inquiries, arrests and committee reports, but meaningful institutional reforms rarely follow. Repeated tragedies across different cities show that accountability remains weak regardless of the government in power.

4. **Response receives greater attention than prevention:** Disaster management continues to focus more on emergency response and relief than on reducing risks before disasters occur. This approach limits long-term resilience and allows preventable hazards to persist.

5. **Urban risks are not fully understood:** Urban risks arise not only from natural hazards but also from poor planning, social vulnerabilities, weak institutions and environmental pressures. However, policies continue to focus mainly on hazard-prone areas instead of addressing wider urban vulnerabilities.

6. **Planning and regulatory gaps remain:** Project approvals, land-use decisions and building regulations often do not adequately consider disaster risks. Existing planning frameworks also lack a comprehensive multi-hazard approach for rapidly growing cities.

7. **Limited institutional capacity and data systems:** Local governments often lack technical expertise, reliable risk data and long-term monitoring systems needed for effective planning. Weak institutional capacity reduces their ability to identify vulnerabilities and prevent future disasters.

8. **Technology exists but governance is weak:** Satellite imagery, drones, GIS, digital property databases and Artificial Intelligence can identify violations and monitor compliance. However, technology alone cannot improve urban safety without strong political will, transparent governance and effective enforcement.

Initiatives for Urban Risk Reduction

A. Global Initiatives

1. **UN-Habitat – New Urban Agenda (2016):** Adopted at the **UN Conference on Housing and Sustainable Urban Development (Habitat III)**, it promotes **safe, inclusive, resilient and sustainable cities** through risk-sensitive urban planning, resilient infrastructure, better land-use management and stronger urban governance. It also encourages cities to integrate disaster risk reduction into long-term urban development.

2. **Sendai Framework for Disaster Risk Reduction (2015–2030):** It provides a global framework to strengthen disaster risk governance, develop national and local disaster risk reduction strategies, improve early warning systems and build resilient infrastructure to minimise disaster losses.

3. **Making Cities Resilient 2030 (MCR2030):** A United Nations Office for Disaster Risk Reduction (**UNDRR) -led global partnership** that supports municipalities in strengthening urban resilience through the **Ten Essentials for Making Cities Resilient**, the **MCR2030 Dashboard**, technical assistance and peer learning among cities.

4. **Sustainable Development Goal (SDG) 11:** It aims to make cities **inclusive, safe, resilient and sustainable** by promoting resilient infrastructure, better urban planning and reduced disaster risks, although disaster risk reduction is not treated as a separate standalone goal.

5. **Paris Agreement (2015):** It supports climate adaptation and resilience by encouraging countries to address climate-related urban risks through adaptation planning and climate finance, although enforcement mechanisms remain limited.

6. **World Bank City Resilience Program (CRP):** It supports cities through tools such as **City Scan** and **Urban Climate Risk Analysis**, helping municipalities identify urban risks and prioritise resilient infrastructure and policy interventions.

B. Indian Initiatives

1. **National Disaster Management Framework:** The Disaster Management Act, 2005, National Disaster Management Policy, 2009 and National Disaster Management Plan, 2016 strengthen disaster risk reduction through preparedness, mitigation, institutional capacity and resilience, providing an important framework for managing urban risks..

2. **Risk Governance Framework (NDMP, 2016):** It promotes **urban disaster resilience** by integrating disaster risk reduction into development planning, strengthening institutions, encouraging community participation and improving governance.

3. **Climate Smart Cities Assessment Framework (CSCAF):** Developed by the **Ministry of Housing and Urban Affairs (MoHUA)**, it helps Urban Local Bodies integrate climate resilience and disaster risk indicators into city planning and improve urban liveability.

4. **NDMA–NIDM State Collaborations:** The **National Disaster Management Authority (NDMA)** and **National Institute of Disaster Management (NIDM)** work with States to integrate geotechnical investigations, landslide mitigation, resilient public infrastructure and disaster risk assessments into urban master plans.

5. **Urban Development Missions: AMRUT, Smart Cities Mission, Pradhan Mantri Awas Yojana (PMAY)** and **Swachh Bharat Mission (Urban)** provide opportunities to integrate resilience into urban infrastructure and service delivery. However, disaster risk reduction remains only partially integrated into these programmes.

6. **Disaster Financing Mechanism:** The **National Disaster Response Fund (NDRF)** provides financial assistance for **emergency response, relief, rehabilitation and recovery**, while the **National Disaster Mitigation Fund (NDMF)**supports **pre-disaster mitigation projects** such as urban flood risk management, heatwave mitigation, resilient infrastructure and other disaster risk reduction measures. Together, they strengthen both response and preventive urban resilience.

Way Forward

1. **Strengthen Urban Local Bodies:** Urban Local Bodies should receive greater administrative and financial powers along with professional urban management to improve governance and service delivery.

2. **Shift from response to risk reduction:** Disaster management should prioritise prevention, preparedness and mitigation instead of focusing mainly on rescue and relief after disasters occur.

3. **Adopt a multi-hazard planning approach:** Urban planning should address multiple hazards together while considering vulnerability, exposure and local response capacity during development decisions.

4. **Strengthen planning and enforcement:** Land-use planning, project approvals and building regulations should fully integrate disaster risk assessments. Existing laws should be enforced without political interference or selective implementation.

5. **Improve technology and data systems:** Satellite imagery, GIS, drones, Artificial Intelligence and digital databases should support compliance, while local governments should build strong data collection, monitoring and evaluation systems for long-term planning.

6. **Build institutional and community capacity:** Governments should strengthen technical expertise, involve elected representatives, civil society, private organisations and local communities, and improve public awareness for disaster preparedness.

7. **Strengthen financial resilience:** Disaster mitigation funds, insurance coverage and better financial mechanisms should support long-term recovery and help cities rebuild more safely after disasters.

8. **Promote resilient and risk-sensitive urban development:** Urban planning should protect critical infrastructure, conserve natural ecosystems and follow the principle of "Build Back Better" during post-disaster recovery.

Conclusion

The repeated urban disasters show that the main challenge is not the absence of laws but weak governance, poor accountability and inadequate disaster risk reduction. Building safer cities requires empowered Urban Local Bodies, integrated risk-sensitive planning, strong institutions, effective enforcement and sustained political commitment. Urban governance should ultimately be judged by its ability to prevent avoidable tragedies, strengthen resilience and ensure that every citizen can live and work safely.

Question for practice:

Discuss the key governance challenges behind recurring urban disasters in India and suggest measures to build safer and more resilient cities.
Source: The Hindu

Co-existing with Tigers Outside Reserves

UPSC Syllabus: Gs Paper 3- Environment
Introduction

India has achieved remarkable success in tiger conservation through **Project Tiger**, making it home to **over 70% of the world's wild tigers**. However, the growing tiger population has increased dispersal beyond protected areas, with **35–40% of tigers now living outside Tiger Reserves**. This has created new conservation and governance challenges, as protecting tigers must now go hand in hand with safeguarding human lives and livelihoods, leading to the launch of the **Tigers Outside Tiger Reserves (TOTR)** initiative.

India's Tiger Conservation Success Story

1. **Project Tiger transformed tiger conservation:** Since its launch in **1973**, the protected area network has expanded from **9 reserves (18,278 sq km)** to **58 reserves (84,488 sq km)**, covering **about 2.6% of India's land area**.

2. **Remarkable recovery of tiger population:** India's tiger population increased from **1,411 in 2006** to **3,682 in 2022**, making the country home to **more than 70% of the global wild tiger population**.

3. **Success created a new conservation challenge:** As tiger populations increased and core habitats became saturated, more tigers naturally dispersed beyond protected areas.

4. **Growing presence outside reserves:** According to the **National Tiger Conservation Authority (NTCA)**, nearly **35–40% of India's tigers now live outside designated Tiger Reserves**, increasing interactions with people.

5. **Shared landscapes increase risks:** Tigers moving into areas with villages, farms, roads and other infrastructure face accidental encounters, livestock attacks, rescue operations and public anxiety, creating ecological, social and administrative challenges.

Tigers Outside Tiger Reserves (TOTR)

A. What is TOTR?

A new conservation initiative: Tigers Outside Tiger Reserves (TOTR) is an initiative of the **Ministry of Environment, Forest and Climate Change** to conserve tigers living outside protected areas. It extends active tiger management to shared landscapes where a large number of tigers now live.

B. Objectives

1. **Conserving tigers beyond protected areas:** TOTR aims to conserve tigers living outside Tiger Reserves through a **scientific, landscape-based approach**, while protecting human lives and livelihoods.

2. **Shifting to proactive conservation:** The initiative moves from responding to conflicts after they occur to preventing them through **technology, preparedness and community participation**.

3. **Strengthening coexistence:** TOTR seeks to create long-term coexistence by reducing conflict and building trust between local communities and forest departments.

C. Key Features

1. **Pilot-based implementation:** TOTR has been launched as a **pilot programme** so that future policy is based on evidence generated under real field conditions.

2. **Scientific selection of areas:** Based on the **All India Tiger Estimation 2022**, the pilot covers **40 forest divisions across nine States**, selected from **212 forest divisions** where tiger presence was recorded.

3. **Coverage beyond Tiger Reserves:** TOTR extends active tiger management to **205 forest divisions**, where nearly **one-third of India's tigers** live. It is supported by an **₹88 crore allocation** under the **Compensatory Afforestation Fund**.

4. **Two complementary pillars:** The first pillar strengthens conflict management through better communication systems, rapid response teams and rescue infrastructure. The second pillar promotes coexistence through community participation, awareness programmes and timely compensation.

Significance of TOTR

1. **Conservation beyond protected areas:** TOTR accepts that tigers move naturally across landscapes and cannot be conserved only inside protected reserves.

2. **Supporting habitat connectivity:** Managing forests outside reserves helps maintain movement between habitats, allowing dispersing tigers to find new territories and support genetic exchange.

3. **Building public trust:** TOTR treats villagers as conservation partners through awareness programmes, community engagement and timely compensation.

4. **Improving governance of shared landscapes:** TOTR broadens conservation from protected areas to reserve forests and other landscapes where ecological processes and human livelihoods exist together.

5. **Using technology for better management:** Camera traps, GPS-enabled monitoring systems, drones and Artificial Intelligence improve surveillance, early warning systems and evidence-based decision-making.

Challenges and Concerns

1. **Increasing human–tiger interactions:** More tigers outside reserves increase the chances of human deaths, livestock losses, accidental encounters and prolonged rescue operations, placing pressure on forest departments and district administrations.

2. **Need for stronger institutional capacity:** Technology alone cannot reduce conflict. Well-trained forest staff, veterinarians and rescue teams are essential for quick and effective field responses.

3. **Delays in compensation reduce public trust:** States have compensation systems, but delays often create resentment among local communities. Simpler procedures and regular outreach are needed to build confidence.

4. **Corridor protection remains a concern:** While TOTR aims to improve tiger movement outside reserves, the **NTCA** has reduced the number of officially recognised tiger corridors from **192 to 32**, raising concerns about habitat connectivity.

5. **Risk from infrastructure development:** Conservation experts warn that reduced official corridor recognition could expose important movement routes to mining, highways, power lines and other infrastructure projects.

6. **Implementation needs accountability:** The pilot programme will succeed only with sustained funding, clear coordination between the Centre and States, transparent use of the **₹88 crore** allocation and regular public reporting on tiger movement, mortality and conflict.

Way Forward

1. **Strengthen scientific implementation:** The pilot phase should generate reliable field evidence to guide future expansion of the programme.

2. **Protect ecological connectivity:** Forest corridors outside protected areas should remain connected so dispersing tigers can move safely between habitats.

3. **Build stronger community partnerships:** Timely compensation, awareness programmes and continuous engagement can improve trust between local communities and forest departments.

4. **Improve institutional preparedness:** States should invest in trained personnel, rescue systems and modern technology to ensure quick and coordinated responses during conflict situations.

5. **Ensure transparent governance:** Regular monitoring, sustained funding and public access to implementation data can improve accountability and strengthen long-term conservation outcomes.

Conclusion

India's tiger conservation has entered a new phase where protecting wildlife also means managing shared landscapes beyond protected areas. **TOTR** marks a shift towards science-based, landscape-level conservation that combines technology, community participation and better governance. Its success will depend on sustained implementation, ecological connectivity and cooperation between governments, local communities and conservation agencies to ensure long-term coexistence between people and tigers.

Question for practice:

Examine the significance of the Tigers Outside Tiger Reserves (TOTR) initiative in promoting human–tiger coexistence beyond protected areas.
Source: The Hindu

Unaddressed challenges: On India's crisis in education

Source: The post "**Unaddressed challenges: On India's crisis in education**" has been created based on "**Unaddressed challenges: On India's crisis in education**" published in "**The Hindu**" on 30th July 2026.

UPSC Syllabus: GS 2- Polity and Governance

Context: India's examination system has repeatedly faced crises that have raised serious concerns regarding its credibility, fairness, and institutional capacity. In response, the government has recently constituted a task force that has been entrusted with implementing the recommendations of the **K. Radhakrishnan Committee (October 2024)**, many of which have remained pending for nearly eighteen months.

Key Reforms Proposed for the National Testing Agency (NTA)

1. The committee has recommended converting the NTA into a statutory institution on the lines of the Union Public Service Commission (UPSC).
2. It has proposed a new leadership structure comprising a Director General and two Additional Directors General.
3. The reforms envisage ten specialised functional verticals dealing with cybersecurity, psychometrics, forensics, logistics, and other critical areas.
4. The committee has recommended establishing one thousand standardized testing centres across the country.
5. It has proposed a Digi-Exam framework integrating Aadhaar authentication, facial recognition, biometric verification, and continuous surveillance.
6. It has also recommended gradually shifting towards continuous, computer-adaptive testing instead of relying entirely on a single high-stakes examination.
7. The committee observed that regulatory bodies such as the National Medical Commission (NMC) and the IITs currently function as passive clients in the examination process.

Challenges in Implementing the Reforms

1. Recruitment for the proposed institutional structure is expected to take six to twelve months, slowing implementation.
2. Government pay scales are insufficient to attract highly skilled professionals from the private sector.
3. The creation of new cadres requires legislative approval, further delaying institutional reforms.
4. These constraints make the target of fully implementing reforms before **NEET 2027** particularly challenging.

Why the Crisis is More than a Technical Problem

1. The proposed reforms mainly focus on technology, surveillance, cybersecurity, logistics, and administrative capacity.
2. The task force is dominated by experts in technology, space research, intelligence, public administration, and logistics, while having only one academic member from IIT Madras.
3. The limited participation of career educators and assessment researchers prevents meaningful debate on what examinations should actually assess.
4. The government appears to have accepted the existing examination model without questioning whether the current system remains appropriate.

Structural Weaknesses in the Examination System

1. The recurring examination crises reflect weaknesses in educational institutions rather than merely failures in examination administration.
2. Unlike JEE Advanced, whose integrity is ensured through the active involvement of IIT faculty, the NTA lacks comparable academic ownership in conducting examinations.
3. JEE Advanced emphasizes fresh application of fundamental concepts, whereas NEET relies significantly on algorithmically assembled question banks.
4. The continued dependence on question banks strengthens the coaching industry and creates greater opportunities for malpractice.
5. The editorial suggests that one of the leading AIIMS institutions could be entrusted with preparing the NEET question paper every year to improve academic credibility.
6. Regulatory institutions such as the National Medical Commission and the IITs should become active partners in designing and conducting examinations rather than remaining passive stakeholders.
7. Similar concerns are evident in issues such as the CBSE marking controversy, which also reflects deeper institutional shortcomings instead of isolated technical failures.

Way Forward

1. The National Testing Agency should be transformed into a professionally managed statutory institution with adequate financial, technological, and human resources.
2. Career educators, assessment researchers, and subject experts should play a central role in designing examinations that assess conceptual understanding, analytical ability, and higher-order thinking.
3. Academic institutions such as the IITs and leading AIIMS institutions should be given greater responsibility in question paper setting and examination design to strengthen academic ownership.
4. The examination system should gradually transition towards continuous and computer-adaptive testing to reduce the excessive dependence on a single high-stakes examination.
5. Recruitment processes should be expedited, and competitive remuneration should be offered to attract experts in cybersecurity, psychometrics, data science, and educational assessment.

6. Regulatory bodies and premier educational institutions should be actively involved in examination governance instead of functioning merely as passive stakeholders.
7. Reforms should balance technological safeguards with measures that strengthen institutional autonomy, transparency, and accountability.
8. The government should prioritize building strong, autonomous, and academically driven educational institutions, as lasting examination reforms depend on institutional quality rather than technological solutions alone.

Conclusion: India's examination crisis is fundamentally an institutional and educational challenge rather than merely a technological or administrative problem. While technological reforms can improve the integrity and security of examinations, sustainable solutions require strong academic institutions, greater involvement of educators in assessment design, and autonomous governance mechanisms. Only a comprehensive approach that combines institutional reform with technological innovation can ensure a fair, credible, and resilient examination system capable of serving the objectives of quality education.

Question: "India's recurring examination crises reflect deeper structural weaknesses in its education system rather than merely technical failures." Discuss in the context of the reforms proposed for the National Testing Agency (NTA).

Source: The Hindu

Ethanol push can deepen water woes

Source: The post "**Ethanol push can deepen water woes"** has been created based on "**Ethanol push can deepen water woes"** published in "**The Hindu**" on **30th July 2026**.

UPSC Syllabus: GS-2- Governance

Context: India has implemented the **Ethanol Blending Programme (EBP)** under; the National Policy on Bio-fuels to reduce crude oil imports, lower carbon emissions, and improve farmers' income. Although the programme provides significant economic and environmental benefits, its increasing dependence on water-intensive crops raises serious concerns about water security and sustainable agriculture.

Benefits of the Ethanol Blending Programme

1. Reduces Crude Oil Imports

a. The programme helps reduce India's dependence on imported crude oil, as the country imports more than 85% of its crude oil requirements.
b. The achievement of the E20 blending target can save nearly **₹40,000 crore** annually in foreign exchange by reducing crude oil imports.

2. Improves Environmental Quality

a. Ethanol improves the combustion of petrol because it contains oxygen, which reduces the emission of harmful pollutants such as carbon monoxide and particulate matter.
b. The programme contributes to reducing carbon emissions and supports India's clean energy transition.

3. Enhances Farmers' Income: The programme creates a guaranteed market for crops such as sugarcane, rice, and maize, thereby increasing farmers' income and strengthening the agricultural economy.

Challenges of the Ethanol Blending Programme

1. Dependence on Food Crops

a. India mainly produces ethanol from primary food crops such as sugarcane, paddy, and maize instead of using crop residues or other advanced biofuel feedstocks.
b. The diversion of food crops for ethanol production may reduce food availability and increase food prices in the long run.

2. High Water Consumption

a. Agriculture already consumes more than **85% of India's available freshwater**, and ethanol feedstock crops require large quantities of water.
b. The production of one litre of ethanol from sugarcane requires approximately **3,630 litres of water**.
c. The production of one litre of ethanol from paddy requires up to **10,790 litres of water**, making it one of the most water-intensive feedstocks.
d. The production of one litre of ethanol from maize requires nearly **4,670 litres of water**.

3. Groundwater Depletion

a. The increased cultivation of water-intensive crops for ethanol can accelerate groundwater depletion in states such as Punjab, Haryana, Western Uttar Pradesh, Gujarat, Maharashtra, and Tamil Nadu.
b. Subsidised electricity and assured procurement by distilleries may encourage excessive groundwater extraction for cultivating ethanol feedstock crops.

4. Long-Term Water Security Concerns

a. According to long-term projections, India's total water demand may exceed the available water supply before **2050**.
b. The expansion of water-intensive crops for ethanol may worsen India's future water crisis.

Measures to Make the Programme Ecologically Sustainable

1. Diversify Ethanol Feedstock

a. The government should promote low-water-consuming coarse cereals such as **bajra, jowar, and ragi** as alternative feedstocks for ethanol production.
b. These crops should be cultivated on rainfed lands to minimise pressure on groundwater resources.

2. Promote Water-Efficient Irrigation

a. The government should make micro-irrigation systems such as drip and sprinkler irrigation compulsory for sugarcane and maize cultivation.
b. Micro-irrigation technologies can reduce water use by **40–50%** while increasing crop productivity.

3. Link Incentives with Water Conservation: Government subsidies, procurement prices, and distillery licences should be linked with the adoption of water-saving irrigation technologies.

4. Promote Water Recycling in Distilleries: Distilleries should be required to install **Zero Liquid Discharge (ZLD)** systems to ensure that industrial water is fully recycled and reused.

5. Adopt an Integrated Policy Approach: The Ethanol Blending Programme should be implemented through coordinated planning among the Ministries of Energy, Agriculture, and Water Resources to balance energy security with water sustainability.

Conclusion: The Ethanol Blending Programme is an important initiative for improving India's energy security, reducing import dependence, and lowering carbon emissions. However, the programme must follow an ecologically sustainable path by conserving water resources, promoting low-water crops, and encouraging efficient irrigation practices. A balanced approach will ensure that the goal of energy security is achieved without compromising India's long-term water security and agricultural sustainability.

Question: India's Ethanol Blending Programme offers economic and environmental benefits but also raises concerns regarding water security and sustainable agriculture. Discuss. Suggest measures to make the programme ecologically sustainable.

Source: The Hindu

Role of Ethics and Emotions in World Politics

UPSC Syllabus: GS2 (International Relations) and GS4 (Ethics, Integrity & Aptitude)
Introduction

For decades, International Relations (IR) was primarily understood through the lens of power, security and national interest. Classical realist thinker **Hans J. Morgenthau** argued that states pursue their national interests in an **anarchic international system**, where no authority exists above sovereign states.

However, recent developments from the Israel–Hamas conflict and the Russia–Ukraine war to debates over India's strategic autonomy- show that foreign policy is shaped not only by power but also by ethics, emotions, identity, public opinion and moral legitimacy

Understanding International Relations Beyond National Interest

International Relations (IR) is the study of interactions among states and other global actors. As an academic discipline, it developed mainly after the Second World War. Political scientist **Stanley Hoffmann** famously described it as **"an American Social Science."**

For much of its history, **Realism** was the dominant theory of international relations. It argues that states primarily pursue power and national interest in an anarchic international system, where no authority exists

above sovereign states. While this explains much of global politics, it cannot fully explain why countries provide humanitarian aid, defend human rights, impose sanctions on moral grounds, or cooperate on global challenges such as climate change and pandemics. This shows that national interest alone is no longer sufficient to explain contemporary international relations..

Understanding Ethics and Emotions in World Politics

To better understand such developments, scholars have increasingly highlighted the role of ethics and emotions in international relations.

Ethics refers to the moral principles and values that guide the behaviour of states, leaders and international institutions. It influences ideas of justice, human rights, humanitarian intervention and international law.

Emotions refer to feelings such as **fear, empathy, pride, anger and compassion** that shape how leaders and societies perceive threats, respond to crises and make foreign policy decisions.

Together, ethics and emotions help explain many foreign policy decisions that cannot be understood through national interest alone.

Why Ethics and Emotions Matter?

Earlier, emotions were often viewed as irrational and irrelevant to diplomacy. However, recent scholarship argues that **reason and emotion work together rather than against each other**.

According to **Neta Crawford**, emotions such as fear, grief, pride, empathy and anger shape leaders' perceptions of threats, influence national identity and generate public support for war or peace.

Ethics is equally important because it provides the moral basis for judging state behaviour, encourages respect for human rights and international law, and helps build trust and cooperation among nations. In other words, emotions are not the opposite of strategy-they are an essential part of strategic decision-making.

Ethics Has Always Been Part of World Politics

Although ethics is often viewed as a recent concern in diplomacy, history suggests otherwise.

During the **Cold War**, the United States projected itself as the defender of democracy, human rights and individual liberty, while portraying the Soviet Union as authoritarian. The rivalry was therefore ideological as well as strategic.

Mahatma Gandhi's philosophy of truth and non-violence inspired civil rights movements across the world. Likewise, **Nelson Mandela's** emphasis on forgiveness and reconciliation helped South Africa transition peacefully after apartheid.

How Ethics and Emotions Influence World Politics?

Ethics and emotions influence international relations in several important ways.

- **Decision-making:** Leaders' ethical beliefs and emotional responses shape decisions during wars, humanitarian crises and peace negotiations.

- **Conflict and cooperation:** Emotions such as fear, hatred and insecurity may intensify conflicts, whereas empathy, trust and forgiveness promote reconciliation and long-term peace.
- **Public opinion:** Real-time media coverage of conflicts, such as those in Gaza and Ukraine, generates public sympathy or outrage, placing pressure on governments to respond.
- **Global norms:** Ethical principles have influenced the evolution of international norms on human rights, climate justice and the Responsibility to Protect (R2P).
- **Soft power:** A country's values, humanitarian assistance and cultural diplomacy increasingly strengthen its global influence alongside military and economic power.

Globalisation, Technology and the Changing Nature of Diplomacy

Globalisation and Ethical Concerns- Globalisation has increased interdependence through trade, technology and international institutions. However, unequal benefits between the Global North and the Global South have raised ethical concerns about fairness, climate justice and inclusive development, making justice and shared responsibility central to global governance.

Technology and the Rise of Digital Diplomacy- The growth of AI, social media and digital communication has transformed diplomacy by making conflicts and humanitarian crises visible in real time. As a result, governments increasingly face pressure to respond on both strategic and ethical grounds.

Emerging Challenges for International Relations- Challenges such as cyberattacks, misinformation, climate change and pandemics have reshaped international security. They require countries to balance national interests with ethical responsibilities, making diplomacy increasingly dependent on both strategic thinking and moral credibility.

India's Perspective

India's foreign policy seeks to balance **strategic realism with ethical values**. While pursuing **strategic autonomy**, India also projects itself as a responsible global actor committed to democracy, pluralism, peaceful coexistence and inclusive development.

India's ethical approach to international relations is reflected in:

- **Vasudhaiva Kutumbakam** ("The World is One Family")
- Its status as the world's largest democracy
- Constitutional values and pluralism
- Its anti-colonial legacy
- Leadership of the Global South
- The legacy of the **Non-Aligned Movement (NAM)**, which promoted sovereign equality, peaceful coexistence and an equitable international order

This vision is also reflected in **Article 51** of the Constitution, which directs the State to promote international peace and security and encourage the peaceful settlement of international disputes. Together, these principles strengthen India's credibility as a responsible global power.

Way Forward

- Balance strategic realism with ethical diplomacy rather than treating them as competing approaches.

- Preserve strategic autonomy while remaining committed to humanitarian values and international law.
- Strengthen India's soft power through democratic values, cultural diplomacy and development partnerships.
- Reform global institutions to make them more representative and responsive to contemporary realities.
- Promote a fair, rules-based international order capable of addressing emerging challenges such as climate change, artificial intelligence, cybersecurity and pandemics.

Conclusion

International relations today extends far beyond power politics. While national interest remains central, ethics, emotions, identity and public opinion increasingly shape how states behave and how the international community evaluates their actions.

In a world that is more interconnected and transparent than ever before, countries that successfully combine **strategic interests with ethical leadership** will be better placed to build trust, exercise influence and shape a more stable and just international order.

Question for Practice- "National interest alone is no longer sufficient to explain state behaviour in contemporary international relations." Discuss in the context of the growing role of ethics and emotions in world politics.

Source- TH

Theaterization

What is Integrated Theatre Command (TC)?

- It is a military structure which seeks to integrate the capabilities of the three services – army, air force and navy– in order to optimally utilize their resources for wars and operations.
- These 'unified combat commands' are organized either on a geographical basis (with a defined mission in a specific 'area of responsibility' somewhere on the globe) or on a functional basis.
- Almost all major countries like China, Russia, the US, the UK and France work on a theatre command concept. **For example-** China's Western Theatre Command looks after the entire borders with India.

What is the existing command structure in India?

- India has 17 single service commands and only two tri-service commands.
- **Single Service Command: The 17 single service commands are divided as- Army – 7 commands; Airforce – 7 commands; Navy – 3 commands.**
- **Tri-Service Command**: The two tri-service commands are- Andaman and Nicobar Command (ANC), and The Strategic Force Command (SFC). The Andaman and Nicobar command is a full-fledged command raised as a tri-service command in 2001. The Strategic Force Command (SFC) handles nuclear weapons.

What are the benefits of Integrated Theatre Commands (ITC)?

1. **Increased efficiency:** It will lead to rationalization of war fighting resources, and efficiency of executions resulting in an integrated action to counter threats.
2. **Rationalization of the command structure:** The present command structure in the Indian military is pretty uneven. The Indian Army has seven commands, while a much smaller Indian Air Force has a

similar number of commands and the Indian Navy has three commands. This structure will be rationalized under the theatre command concept.

3. **Effective neutralization of Chinese threat:** China's Western Theater Command looks after the entire borders with India, unlike India where it has multiple Commands and structures to respond with different officers at the top.
4. **Cost-effective in the long run:** Theaterization will help in better planning and military response and also bring down costs. While the cost may go up in the immediate future since all theaters would have to be armed with sufficient systems, it will prove to be cost-effective in the long term as all acquisitions will be a unified one.
5. **Operational Freedom:** The integrated theatre commander will not be answerable to individual Services, and will be free to train, equip and exercise his command to make it a cohesive fighting force capable of achieving designated goals.

What are the Challenges in the Establishment of Integrated Theatre Command in India?

1. **Knowledge Gap at the Top**: The Theatre Commander will command forces from all three services, but he or she is likely to have operational experience in at most two of them. This may create a knowledge gap at the highest level of command, which could prove critical during fast-paced, multi-domain conflicts such as Operation Sindoor (2025).
2. **Inter-Service Competition:** The intense focus of each service on its own assets and influence can hinder the creation of synergy among the services.
3. **Massive funding:** Creation of infrastructure for the Theatre commands will require huge amounts of funding.
4. **Different service cultures:** The service culture and way of functioning of the three services is very different. The Indian Army has regimental affiliations and is bound by its legacy. Merging services with unique values & cultures is a challenge & finding the right mix of service culture remains a challenge.
5. **Perception of Army Dominance:** There are concerns that the integration of the commands may perpetuate the perceived dominance of the army and provide it with greater operational control.
6. **Infrastructure and Logistical coordination issues:** Coordinating and synchronizing the infrastructure and logistics requirements across different services could be complex and resource-intensive.
7. **Lack of National Security Strategy (NSS):** Many retired military professionals have criticised implementing theatre commands without having a coherent National Security Strategy (NSS).
8. **Slower Decision Making**: The CDS and Vice CDS remain between the Theatre Commander and the Raksha Mantri. Although direct reporting is envisaged during combat, shifting from peacetime command practices may be difficult, potentially delaying decisions during fast-paced, high-intensity military operations.
9. **Delay in Implementation**: While China established Theatre Commands in about two years and the US evolved its system over a decade, India has spent nearly 25 years debating the reform. The greater challenge lies not in the structure itself, but in changing institutional mindsets.

What Should be the Way Forward?

1. **A supportive ecosystem:** In order for Theatre Commands to be effective, there needs to be a supporting ecosystem. India still remains the 2nd largest arms importer in the world. Hence, indigenous technology and hardware by self-reliance should be a priority.
2. **Managing internal & external security:** There needs to be an assessment of how the internal and external security will be managed under the theatre commands. It is because there are lakhs of paramilitary personnel and the Indian Coast Guard.
3. **Parliament's role:** The legislature needs to play a far more proactive role. A Dedicated Standing Committee of Parliament should be created. It needs to be staffed with military advisers and other professionals to independently monitor the transition very minutely.
4. **Geography-based theatres:** Keeping in mind the changing nature of threats, India can also aim for four geography-based theatres—Northern, Southern, Eastern, and Western—each equipped to use land, sea, air, space, and cyber power to handle all threats in their areas.
5. **Talent based appointments:** No theatre should 'belong' to any service, and command appointments should be decided based on talent and experience in joint operations.

6. **Clear working out of Budgetary allocations:** Budgetary allocations and the distribution of funds need to be clearly worked out to enable the setting up of a seamless theatre command system
7. **Modular structure:** In the theaterization debate, India must not forget to modularize its armed forces. The present big hierarchical formations need to be divided into many small networked brigades. Multiple studies have shown that these are superior to the division-based structure in terms of deployability, employability, and sustainability.

Conclusion

Integrated Theatre Commands can transform India's armed forces into a joint, agile and multi-domain combat force capable of addressing future security challenges. Their success will depend on a National Security Strategy, indigenous defence capabilities, and seamless inter-service integration. With sustained reforms and political commitment, theaterization can significantly strengthen India's deterrence, warfighting capability, and strategic role in the Indo-Pacific.

Question for Practise:

The Integrated Theatre Command (ITC) system represents a major shift in India's higher defence management. Discuss the significance of theaterization for India's national security. Also examine the challenges in its effective implementation.

Source: The Hindu

Have fast-track courts delivered on the prom-ise of speedy justice?

Source: The post **"Have fast-track courts delivered on the prom-ise of speedy justice?"** has been created based on **"Have fast-track courts delivered on the prom-ise of speedy justice?"** published in "The Hindu" on 31st July 2026.

UPSC Syllabus: GS 2– Polity & Governance

Context: Fast-track courts are specialised courts intended to ensure **expeditious disposal of priority categories of cases**. The debate has gained renewed importance after the proposal to establish fast-track courts for **paper-leak cases under the Public Examinations (Prevention of Unfair Means) framework**. However, with **nearly 2.45 lakh cases pending before FTSCs**, their ability to provide genuinely speedy justice requires closer examination.

Effectiveness of Fast-Track Courts

1. **Faster disposal of priority cases:** FTSCs provide dedicated judicial attention to selected categories, enabling them to move faster than they ordinarily would.
2. **Focused adjudication:** Special allocation allows judges to concentrate on a limited category of cases rather than handling a wide variety of disputes.
3. **Protection of vulnerable victims:** FTSCs established in 2019 prioritised **rape cases and offences under the POCSO Act**, recognising the need for time-bound justice in sensitive cases.
4. **Policy responsiveness:** Fast-track mechanisms allow the judicial system to respond quickly to categories requiring urgent attention, such as **paper-leak cases**.
5. **Reduction of delays in designated cases:** By prioritising hearings and limiting competing matters, FTSCs can reduce delays for the cases specifically assigned to them.

Limitations of Fast-Track Courts

1. **Backlog within FTSCs:** Nearly **2.45 lakh cases are pending**, showing that even specialised courts face significant pendency.
2. **Backlog merely shifts elsewhere:** Judges are generally reassigned from existing courts rather than additional judicial capacity being created. Thus, faster disposal of priority cases may **delay cases in regular courts**.
3. **Low case-clearance rate:** In 2025, around **1.4 lakh cases were instituted but only about 66,000 were disposed of**, causing accumulation of cases.
4. **System-wide pendency:** Trial courts face nearly **4.8 crore pending cases**, about **74% of which are criminal matters**. FTSCs cannot overcome this wider structural burden alone.
5. **Resource shortages:** Inadequate judges, prosecutors, investigators, support staff and **forensic laboratories** constrain their functioning.
6. **Procedural bottlenecks:** Delayed witness depositions, frequent adjournments and weak coordination among stakeholders slow proceedings.
7. **Lack of transparency:** Comparable data on the **actual time taken by FTSCs to dispose of cases** is unavailable, making their performance difficult to assess.
8. **Fair-trial concerns:** Rigid timelines may prevent adequate examination of voluminous evidence and restrict effective witness management.
9. **Equality concerns:** Arbitrary selection of cases for fast-tracking may raise **Article 14 concerns** and must therefore have a rational basis.

Way Forward

1. Create **additional judicial capacity** instead of merely reallocating existing judges.
2. Fill judicial vacancies and strengthen **prosecution, investigation and court-support staff**.
3. Expand **forensic and cyber-forensic infrastructure** for timely investigations.
4. Ensure predictable scheduling of witnesses, lawyers, investigators and prosecutors.
5. Minimise unnecessary adjournments and ensure timely compliance with court directions.
6. Publish reliable data on **case-clearance rates and disposal timelines** of FTSCs.
7. Keep timelines sufficiently flexible to balance **speedy justice with procedural fairness**.

Conclusion: Fast-track courts are useful for **prioritising urgent cases**, but they cannot substitute for comprehensive judicial reform. The ultimate objective should be a regular justice system with sufficient capacity to provide **timely, fair and equal justice without requiring special fast-track mechanisms**.

Question: "Fast-track courts can prioritise cases, but cannot by themselves cure the structural causes of judicial delay." Examine the effectiveness of Fast-Track Special Courts (FTSCs) in ensuring speedy justice in India and suggest institutional reforms.

Source: The Hindu

NEET paper leaks: Diagnosing the real disease

Source: The post **"NEET paper leaks: Diagnosing the real disease"** has been created based on **"NEET paper leaks: Diagnosing the real disease"** published in "BusinessLine" on 31st July 2026.

UPSC Syllabus: GS 2 – Governance

Context: The government has constituted a **high-powered committee** to strengthen the examination system, prevent paper leaks, improve security and enhance transparency in NEET. However, the larger issue is whether NEET should remain primarily an **elimination and ranking examination** or evolve into a system that identifies candidates with the potential to become **competent, ethical and compassionate physicians**.

Limitations of the Present NEET System

1. **Narrow conception of merit:** A single multiple-choice examination primarily assesses **scientific knowledge and academic preparedness**, rather than the full range of qualities required in medicine.
2. **Fairness does not ensure appropriateness:** Conducting the same examination fairly for everyone ensures procedural equality, but does not necessarily mean that the examination selects the **most suitable future doctors**.
3. **Neglect of professional attributes:** Qualities such as **compassion, integrity, ethical judgment, communication, resilience and commitment to service** cannot adequately be assessed through multiple-choice questions.
4. **Medical seats are societal investments:** Admission to medical education is not merely an educational opportunity because society ultimately entrusts doctors with **human life, suffering and critical decisions affecting families**.
5. **Medicine is based on trust:** Scientific competence alone is insufficient because the doctor-patient relationship also requires **empathy, honesty and social responsibility**.
6. **Changing nature of medicine:** With **AI and digital technologies** increasingly performing routine cognitive and informational tasks, doctors will increasingly function as **interpreters, counsellors and trusted guides**.

Key Attributes Medical Selection Should Identify

1. The purpose of medical admission should shift from merely **ranking and eliminating candidates to identifying future doctors**.
2. Selection should combine **scientific competence with integrity, compassion and social responsibility**.
3. The definition of merit should therefore be broadened without sacrificing **objectivity and transparency**.
4. The system should recognise that education connects the **economic and developmental role of professionals** with the **civilisational values of integrity, justice, empathy and compassion**.

Way Forward

1. **Secure the examination process:** Paper leaks must be prevented through stronger security, transparency and credible examination governance.
2. **Retain scientific assessment:** NEET can continue to assess the scientific preparedness necessary for medical education.
3. **Broaden assessment of merit:** A scientifically rigorous framework should identify professional attributes such as **ethical judgment, communication, compassion and resilience**.
4. **Avoid arbitrary subjectivity:** Reform should not mean replacing NEET with **subjective interviews or discretionary admissions**.

5. **Develop a nationally acceptable framework:** Any new mechanism must remain **transparent, objective, scientifically validated and uniformly applicable**.
6. **Align selection with future healthcare:** Medical admissions should reflect the changing role of doctors in an **AI-enabled healthcare system**, where human interaction and ethical judgment will become increasingly important.

Conclusion: The success of NEET reform should not be judged merely by whether the next examination is **free from paper leaks**. The deeper reform lies in transforming medical admissions from a mechanism for **eliminating candidates into one capable of identifying competent, ethical and compassionate future doctors**.

Question: Recent controversies surrounding NEET highlight that reforming medical entrance examinations requires going beyond examination security to reconsider the very meaning of merit in medical education. Discuss.

Source: Business Line

SHANTI Doctrine

What is India's SHANTI Doctrine?

- SHANTI Doctrine is a foreign policy and global governance vision unveiled by the External Affairs Minister Subrahmanyam Jaishankar during the launch of India's campaign for a non-permanent seat on the UN Security Council (UNSC) for the 2028–29 term.
- It presents India's approach towards building a secure, peaceful, and equitable world based on rules, cooperation, and inclusive development.
- SHANTI stands for: Securing Holistic Advancement through Norms, Trust and Integrity.
- SHANTI is India's latest strategic framework, building upon the earlier SAGAR (Security and Growth for All in the Region) and MAHASAGAR frameworks.

What is the significance of India's SHANTI Doctrine?

1. Strengthens India's Bid for UNSC Term: SHANTI provides a values-based campaign platform for India's candidature for the 2028–29 non-permanent seat, competing against Tajikistan for the sole Asia-Pacific Group slot.
2. Supports India's UNSC Aspirations: By explicitly mentioning that reform limited only to the non-permanent category would be a "failure," SHANTI boosts India's permanent seat ambition even while pursuing a non-permanent term.
3. Promotes Rules-Based Global Order: The SHANTI Doctrine reaffirms India's commitment to international law, the UN Charter, peaceful dispute resolution, and multilateralism. Thus, it will help in fostering a stable, predictable, and equitable global order based on shared norms and mutual trust.
4. Advances the Interests of the Global South: The SHANTI Doctrine reinforces India's role as the voice of the Global South by advocating equitable global governance, greater representation in international institutions, development cooperation, climate justice, and inclusive, sustainable growth.
5. Strengthens Maritime Security: The SHANTI Doctrine complements SAGAR and MAHASAGAR by promoting a free, open, secure, and rules-based maritime order, strengthening maritime cooperation, ensuring freedom of navigation, and enhancing security across the Indo-Pacific region.
6. Promotes Peace and Stability: The SHANTI Doctrine emphasizes peaceful dispute resolution, and dialogue-based conflict management, contributing to regional and global peace, stability, and a rules-based international order.
7. Encourages Responsible Use of Technology: The SHANTI Doctrine advocates the ethical, secure, and inclusive use of emerging technologies such as Artificial Intelligence, cyber technologies, and digital platforms through international cooperation, robust governance, and global standards.

8. Strengthens India's Indo-Pacific Strategy: The SHANTI Doctrine complements the Act East Policy, and the Indo-Pacific Oceans Initiative (IPOI) by promoting a free, open, inclusive, and rules-based Indo-Pacific through enhanced maritime cooperation, connectivity, and regional partnerships.

How can the Bay of Bengal play an important role in implementing India's SHANTI Doctrine?

1. Strengthening Maritime Security: The SHANTI doctrine enables India to enhance maritime security in Bay of Bengal through coordinated naval exercises, Maritime Domain Awareness (MDA), intelligence sharing, and joint efforts against piracy, terrorism, trafficking, and illegal fishing.
2. Promoting a Rules-Based Maritime Order: SHANTI enables India to uphold UNCLOS, freedom of navigation, peaceful dispute resolution, and respect for international maritime law, fostering stability, trust, and secure maritime commerce in the Bay of Bengal region first & then in the Indo-Pacific region.
3. Enhancing Regional Connectivity: SHANTI Doctrine will enhance the regional connectivity in the Bay of Bengal littoral countries by improving multimodal connectivity through the Kaladan Project, India-Myanmar-Thailand Trilateral Highway, ports, and coastal shipping, fostering trade, economic integration, and regional trust.
4. Advancing the Blue Economy: The SHANTI Doctrine promotes sustainable fisheries, marine resource management, offshore renewable energy, maritime tourism, and resilient port infrastructure in the Bay of Bengal, fostering inclusive growth, regional cooperation, and environmental sustainability.
5. Climate Resilience & Disaster Management: The Bay of Bengal is one of the world's most cyclone-prone marine basins, directly threatening millions of coastal residents. Under the SHANTI doctrine's widened security scope, India leads joint HADR exercises & early-warning data sharingacross the littoral states.
6. Strengthening BIMSTEC: SHANTI will eventually help in strengthening & operationalizing the BIMSTEC by enhancing regional cooperation in maritime security, trade, connectivity, disaster management, and capacity building, while fostering trust, inclusive development, and a rules-based order in the Bay of Bengal.

What are the major challenges in implementing India's SHANTI Doctrine?

1. Veto Power and Structural Stalemate: The core pillar of SHANTI calls for reforming the UNSC. However, the five permanent members (P5) remain reluctant to dilute their veto powers or agree on text-based negotiations, making it difficult for India to achieve concrete reforms and expand the Security Council.
2. Regional Security Threats: Persistent terrorism, piracy, illegal fishing, trafficking, maritime disputes, and transnational crime in the Indo-Pacific and Bay of Bengal can undermine regional stability, making effective implementation of the SHANTI Doctrine more challenging.
3. China's Expanding Maritime Presence: China's expanding naval deployments, port infrastructure under the Belt and Road Initiative (BRI), and growing influence in the Indian Ocean challenge India's efforts to promote a secure, rules-based, and cooperative maritime order under the SHANTI Doctrine.
4. Weak Regional Cooperation: Divergent strategic interests, political differences, and uneven institutional capacities among regional countries can hinder consensus-building, limiting effective cooperation on maritime security, connectivity, climate action, and implementation of the SHANTI Doctrine.
5. Climate Change and Natural Disasters: Frequent cyclones, sea-level rise, and coastal erosion in the Bay of Bengal threaten maritime infrastructure, connectivity, and livelihoods, making climate resilience, disaster preparedness, and regional cooperation essential for the effective implementation of the SHANTI Doctrine.
6. Resource Constraints: Implementing the SHANTI Doctrine requires sustained investment in maritime infrastructure, naval modernization, connectivity projects, technology, capacity building, and development partnerships. Limited financial and institutional resources may constrain its effective implementation and long-term sustainability.
7. Erosion of Strategic Autonomy: India's broader maritime challenges involve balancing its desire to counter China's influence without engaging in the arms race or becoming entangled in formal alliances - which is a tightrope walk that impacts all its maritime doctrines.

Conclusion: The success of the SHANTI Doctrine will depend on India's ability to strengthen the regional institutions, build maritime and technological capacities, and translate its vision of Norms, Trust, and Integrity into practical outcomes through sustained diplomacy and partnerships.

Question for practise
What is India's SHANTI Doctrine? How can the Bay of Bengal serve as an ideal region for its operationalisation before expanding it to the wider Indo-Pacific?

Source: The Hindu

AI as the Next Digital Public Infrastructure (DPI)

UPSC Syllabus- GS Paper II: Government policies, DPI & e-Governance. GS Paper III: AI, Digital Infrastructure, Science & Technology.

Introduction

India's digital transformation over the last decade has been driven by the **JAM trinity** and its extensions- **Aadhaar** (identity), **UPI** (payments), and DEPA/Account Aggregator (data)-which together form one of the world's most advanced **Digital Public Infrastructure (DPI) ecosystems**. By making these services widely accessible at minimal cost, India turned digital infrastructure into a public utility that millions rely on every day. As artificial intelligence (AI) begins to reshape the global digital economy, an important question arises: can India replicate this model by making AI the next public utility through the same approach of building shared digital infrastructure and bringing down the cost of access?

1. India's DPI Success: Lessons for AI

India has repeatedly demonstrated that **state-enabled competition**, rather than subsidies alone, can make essential digital services affordable and accessible.

- **Affordable data:** Between 2016 and 2019, mobile data prices fell sharply due to infrastructure expansion and market competition, bringing nearly **500 million people online** within a few years.
- **Affordable identity:** Aadhaar enrolled over a billion residents, replacing costly paper-based identity verification with a low-cost, API-driven digital system.
- **Affordable payments:** UPI transformed digital payments into a near-free public utility by enabling seamless interoperability across banks and payment applications.

In each case, the government created the digital infrastructure, standards, and regulatory framework, while competition among private players reduced costs and expanded access.

2. India's Comparative Advantage in Digital Public Infrastructure

Unlike many countries that have developed digital systems in isolated sectors, India has integrated **identity, payments, and data-sharing** into a single interoperable public digital ecosystem.

- **Estonia** has an advanced digital identity system but lacks an equivalent public payments infrastructure.
- **Brazil's Pix** provides an efficient instant-payment platform but functions largely as a standalone system.
- **Singapore's Singpass and SGFinDex**, along with **Europe's open banking framework**, offer data portability but only in limited domains.

India's strength lies not in any one platform, but in the seamless integration of **Aadhaar, UPI, and the Account Aggregator framework** as interoperable digital public goods. This unique ecosystem provides a strong foundation for extending the DPI approach to artificial intelligence.

3. Why India Needs an AI-DPI

Despite its success in digital public infrastructure, India occupies a relatively weak position in the global AI value chain.

- Indian engineers develop and fine-tune frontier AI models that are largely created abroad.
- India's digitised public life-including languages, transactions, and documents—serves as valuable training data for foreign AI models.
- Indian universities and the Indian diaspora contribute significantly to global AI research.

Yet, Indian startups often have to buy back AI capabilities through expensive, dollar-denominated API services controlled by foreign companies and hosted outside India's jurisdiction.

This resembles India's historical experience during the colonial textile trade, where raw cotton was exported cheaply while finished cloth was imported at a premium. Similarly, India today exports **data, talent, and AI usage**, while importing finished AI capabilities on terms set by others. This underscores the need for an AI ecosystem built on India's own digital public infrastructure.

4. Building an Indian AI-DPI Ecosystem

(a) Democratising Compute

Through the **IndiaAI Mission**, backed by significant government investment, India has adopted a **public-private partnership model** for AI compute. Instead of creating a state-owned data-centre monopoly, the government has empanelled private cloud providers and aggregated national demand.

- Tens of thousands of GPUs have already been onboarded, with plans for further expansion.
- This enables startups and researchers to access computing resources at a fraction of global market costs.

A complementary proposal is to integrate AI compute requirements into **national electricity and grid planning**, treating power supply for data centres as strategic infrastructure, much like coal linkages were once prioritised for steel production.

(b) Promoting Open-Weight Foundation Models

Dependence on proprietary foreign AI models exposes Indian startups to pricing uncertainty and policy changes beyond their control.

The proposed approach includes:

- Aggregating anonymised public datasets—such as legal judgments, agricultural records, and educational content in India's official languages—for developing open-source AI models.
- Requiring that AI models built using publicly subsidised compute or public datasets be released under an **open-weights licence**.

This reflects the philosophy behind UPI, where the government builds and standardises the underlying infrastructure while private firms compete by creating innovative applications and services.

(c) Unified Intelligence Interface (UII): "UPI for AI"

Just as UPI's greatest strength lies in interoperability rather than free payments alone, the proposed **Unified Intelligence Interface (UII)** aims to provide a standardised API gateway through which applications can seamlessly access multiple AI models—both sovereign and private.

The UII would establish common standards for:

- Identity verification
- User consent
- Billing
- Safety and governance

This would enable startups, government departments, and educational institutions to access translation, vision, and text-generation services at minimal cost.

5. Financing Inclusive AI Access

To ensure broad and affordable access, proposals include introducing an **Aadhaar-linked freemium token model**, under which:

- Verified students, researchers, and startups would receive subsidised AI API tokens.
- Commercial enterprises would gradually shift to paid access, helping cross-subsidise free users.

Another proposal is to reallocate a portion of existing subsidy expenditure—for example, from fertiliser subsidies—to support AI access for schools, universities, and research institutions.

6. Transformative Potential of AI-DPI

If AI becomes affordable and widely accessible, it could significantly improve service delivery across multiple sectors.

- **Healthcare:** India-trained AI models could strengthen healthcare delivery in underserved rural areas.
- **Education:** Personalised multilingual tutoring could become accessible to hundreds of millions of learners.
- **Agriculture and governance:** Voice-enabled services in Indian languages could simplify access to crop insurance, public services, and grievance redressal.

This would not only reduce the cost of accessing intelligence but also make AI a powerful tool for inclusive development across the country.

Challenges and Concerns

- **Data privacy and consent:** Large-scale use of public datasets raises concerns about anonymisation, surveillance, data misuse, and informed consent.

- **Quality of open-weight Indic models:** Building globally competitive AI models requires sustained investment in compute, skilled talent, and high-quality multilingual datasets.
- **Energy and infrastructure constraints:** Scaling AI infrastructure demands reliable electricity, robust data centres, and integration with long-term national energy planning.
- **Digital divide:** Affordable AI alone cannot ensure inclusion without widespread access to devices, internet connectivity, and digital literacy.
- **Global competitiveness:** Since frontier AI training is highly capital-intensive, India may achieve better outcomes by prioritising cost-effective inference capabilities alongside targeted model development.
- **Governance of open-weight models:** Open AI models require strong regulatory safeguards to address concerns related to misuse, safety, accountability, and responsible deployment.

Way Forward

- **Integrate AI into India's DPI framework:** Position the IndiaAI Mission and the proposed Unified Intelligence Interface within the broader Digital India architecture to ensure interoperability and common standards.
- **Treat AI compute as strategic infrastructure:** Integrate data-centre power requirements into the National Electricity Plan with dedicated renewable and nuclear energy support.
- **Promote open-weight innovation:** Encourage open licensing for AI models developed using public compute or datasets while incentivising private-sector innovation.
- **Strengthen data governance:** Build robust safeguards for anonymisation, consent, transparency, and independent oversight in the use of public datasets.
- **Bridge the digital divide:** Complement affordable AI access with continued investments in rural connectivity, affordable devices, and digital literacy.
- **Shape global AI governance:** Play an active role in international forums to shape norms on open-source AI, cross-border data flows, and AI infrastructure, positioning India as a rule-shaper rather than a rule-taker.

Conclusion

India's success with **Aadhaar, UPI, and data infrastructure** shows that open, interoperable digital public infrastructure can make essential services widely accessible. Applying this model to AI through affordable compute, open-weight models, and a Unified Intelligence Interface can help India become a global AI leader while ensuring that AI serves as an inclusive public good rather than a privilege for a few.

Question for Practice- India's success with Aadhaar, UPI, and the Account Aggregator framework provides a template for democratising Artificial Intelligence. Examine the feasibility of developing AI as the next Digital Public Infrastructure (DPI) in India

Source- TH